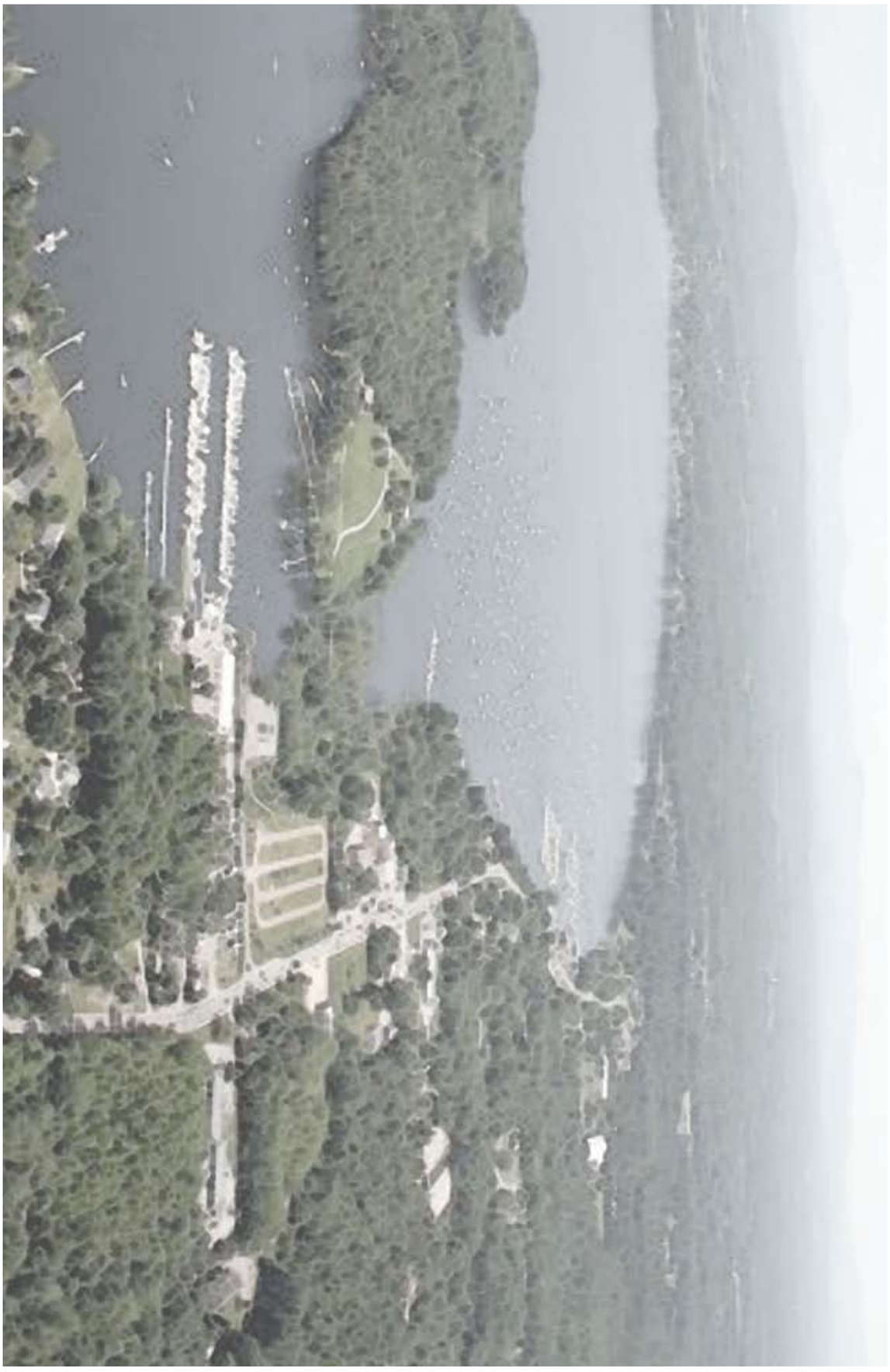

west lakeshore drive

CONCEPTUAL DEVELOPMENT PLAN

west lakeshore drive

CONCEPTUAL DEVELOPMENT PLAN

Prepared for: Town of Colchester, Vermont

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Funded with a FY07 Municipal Planning Grant from the
Vermont Department of Housing and Community Affairs

April 25, 2008

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introduction

This report describes the process, findings and recommendations of the West Lakeshore Drive Corridor Study. The resulting Conceptual Development Plan for a village center on Malletts Bay includes opportunities for:

- The creation of a community where residents, visitors and businesses can make the most of the waterfront;
- The redevelopment of a congested commuter thoroughfare into a welcoming, multi-modal street;
- The protection of the area's natural resources including the sand plain natural community, Diversity Hill, and Malletts Bay shorelands and water quality;
- The integration of the area's natural and built environment through a network of streets, sidewalks, paths, trails, public parks and open spaces; and
- The creation of a sense of place and identity for the area.

BACKGROUND

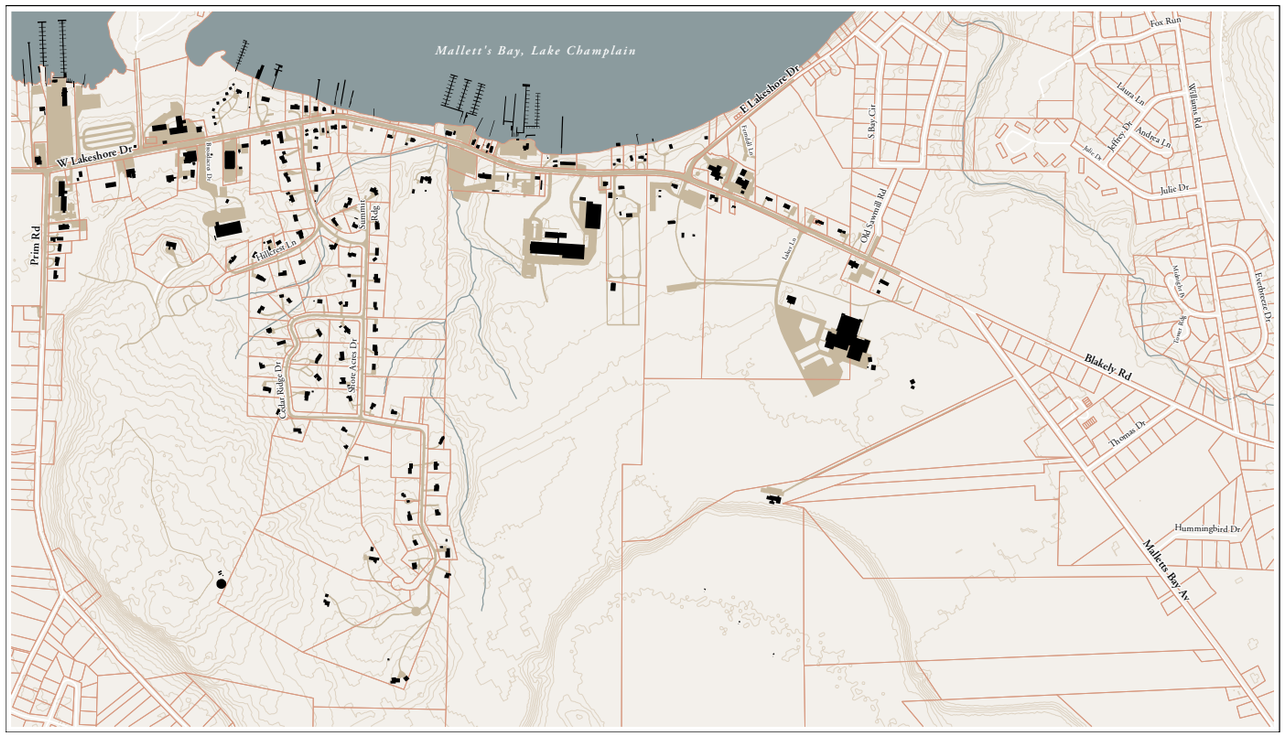
Colchester has historically considered various directions for the West Lakeshore Drive area, but none of these plans have been formally adopted. In 1994, a plan was developed for a "Village at Malletts Bay," which called for commercialization of the corridor with dense, multi-story buildings. While there was a community consensus that this area should be a village, concerns existed over densities and scale of potential development. The 1998 Route 127 Corridor Study

1. West Lakeshore Drive Study Area (2004 photo)

recommended improvements to West Lakeshore Drive including widening the roadway and constructing sidewalks and a bike path. A 1999 bond vote to extend sewers to Malletts Bay failed, leading to a series of forums in 2002 and 2003 to gather citizen input. Concerns about water quality, sidewalks and bike paths, and traffic levels were identified as issues that need to be addressed before the infrastructure that would support higher-density development should be provided in the area.

In 2006, the town decided that another planning study for the corridor should be completed that would incorporate the concerns raised about the 1994 plan, 1998 transportation study and subsequent public input. Colchester received a planning grant for the project and the consultant team of Edge Effects and PlaceSense began work in the spring of 2007 on this plan for the West Lakeshore Drive corridor.

2. Existing Development Pattern



PURPOSE OF THE STUDY

In regards to the West Lakeshore Drive area, the 2007 Colchester Town Plan states, "A comprehensive land use plan is needed for this area that addresses the current diversity of zoning within the neighborhood but that maintains the scale and sense of place of the area.... A comprehensive land use plan for this area should be a priority during the term of this plan." This study provides that conceptual development plan for the West Lakeshore Drive area and recommends revisions to the town's zoning regulations and official map to implement the proposed plan.

DESCRIPTION OF THE PROJECT AREA

The West Lakeshore Drive area, which extends from the Blakely Road intersection west to Prim Road and south to the planned Circumferential Highway corridor, is recognized as an important asset to the Town of Colchester. This section of shoreline is the center of recreational activities on Malletts Bay, including the town beach, town parks, school athletic fields, marinas and state boat launch. Significant wetlands and sand plain natural communities characterize the southern lands and the western boundary is defined by Diversity Hill with its steep slopes adjacent to Prim Road.

In addition to the recreational land uses, the area is composed of a mix of uses including a large manufacturing facility, convenience-oriented shopping centers and the Shore Acres residential neighborhood. Several individual residences and small businesses also line West Lakeshore Drive. Colchester's current Comprehensive Plan has designated this area as a mixed-use village. However, there is a perception that further development or expansion of existing land use in the project area is constrained by the lack of infrastructure since municipal water is available, but municipal sewer

is not. While some potential for infill development exists under current conditions, significant increases in density would not be possible without off-site wastewater treatment. Water quality in Malletts Bay is a key concern for Colchester residents. Increasing pollution, largely from non-point sources such as runoff from developed land, is reducing water quality throughout Lake Champlain. The bay regularly experiences outbreaks of high bacterial counts that close beaches to swimmers.

Between Blakely Road and Prim Road, West Lakeshore Drive, also designated as Vermont Route 127, carries heavy traffic volumes in excess of 14,000 vehicles per day. Other sections of the Route 127 corridor carry around 9,000 vehicles per day. This level of traffic has led to significant delays and poor levels of service within the corridor. Commuters traveling between Burlington and points to the north and east account for as much as 75 percent of that load.

Numerous studies have documented the need for improvements to the road and changes to traffic circulation patterns in the area. Specifically, the Route 127 Corridor Study, completed in 1998, detailed improvements to the configuration and condition of the road.

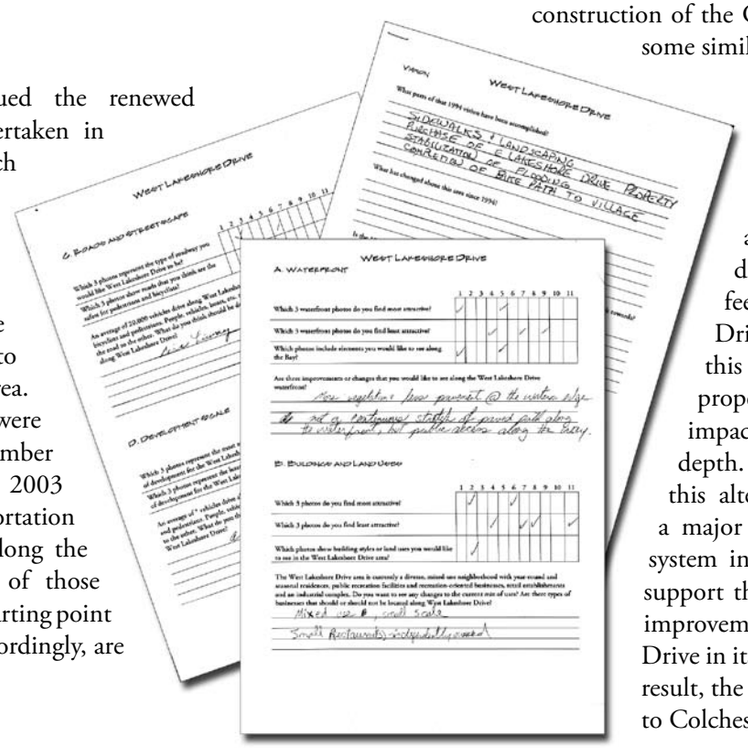
There is strong support for continued improvements to accommodate pedestrian and bicycle traffic in the corridor in an effort to make it a multi-modal transportation corridor. Earlier planning work has also explored options to bypassing through traffic away from West Lakeshore Drive.

opportunities & constraints

As a starting point for creating the West Lakeshore Drive Conceptual Development Plan, information was gathered as to what physical constraints exist, what development or redevelopment opportunities might be possible, and what character and density of development residents would support within the study area. This information came from existing resource maps, previous planning and traffic studies, and input from Colchester's Planning Commission, planning staff and town residents.

PUBLIC INPUT

This project continued the renewed planning efforts undertaken in 2002 and 2003, which were intended to re-examine residents' preferences for the future of Lakeshore Drive in light of the failed bond vote to extend sewers to the area. Four public forums were held between November of 2002 and March 2003 to discuss transportation and land use issues along the corridor. The results of those meetings provided a starting point for this study and, accordingly, are summarized below.



2002/03 West Lakeshore Drive Public Forums

The greatest concern was the impact of through traffic on West Lakeshore Drive. Participants opposed the 1998 Route 127 Corridor Study recommendation to upgrade West Lakeshore Drive by widening it to a paved width of 28 feet. There was a strong feeling that such action would increase speeds and would provide no local benefit. Instead, participants wanted to encourage some form of bypass to move traffic off West Lakeshore Drive, including supporting construction of the Circumferential Highway or some similar roadway.

During these forums, the concept of a parallel road south of West Lakeshore Drive was developed. While a conceptual route was defined approximately 400 feet south of West Lakeshore Drive, detailed planning of this alternative did not occur; property and environmental impacts were not explored in depth. However during the forums, this alternative, which represented a major redesign of the circulation system in the corridor, had stronger support than one focused on making improvements to West Lakeshore Drive in its existing configuration. As a result, the parallel road was later added to Colchester's Official Map.

Throughout the forums, pedestrian and bicycle facilities were one of the highest priorities for participants. The Route 127 Corridor Study called for a sidewalk on the south side of the road and a bike path on the lakeshore side. Colchester has been implementing some of the bike-pedestrian and traffic calming elements of the Route 127 Corridor Study in recent years. The town completed the sidewalk on the south side of West Lakeshore Drive in 2007.

It became apparent from the discussion at the forums that Colchester residents did not view West Lakeshore Drive as a major commercial growth area. There was little support for the Comprehensive Plan goal of a "focus of recreational use by allowing restaurants, hotels and similar uses." Some recreational uses should be encouraged, but not with a major tourist emphasis. There was support for a village pattern of growth with multi-story buildings fronting on the sidewalk. Development elsewhere in Colchester since 1994 led some participants to question whether the West Lakeshore Drive area should be one of the areas in town where significant amounts of new growth would be focused.

The on-going concern related to water quality in Malletts Bay was another theme that came out of the forums. As this area relies on septic systems and its stormwater runoff drains directly to the bay, additional or more intensive growth and development must be linked to improved wastewater and stormwater management to gain public support. The lack of a comprehensive plan to address stormwater and water quality issues in coordination with provision of wastewater infrastructure was seen as a major cause of the failed bond vote in 1999. Residents were concerned that infrastructure would support higher density development, increasing stormwater runoff and further reducing water quality in the bay.

3. Parallel Road as Currently Shown on Colchester's Official Map

2007 West Lakeshore Drive Charrette

At the start of this project, a follow-up meeting was scheduled to assess whether public opinion had changed since 2002-03. A public workshop was held on May 29, 2007, during which participants had an opportunity to discuss issues including traffic circulation, density of development, water quality and recreation amenities. The input received at that meeting indicated that public opinion about the future of the study area remained largely the same after five years.

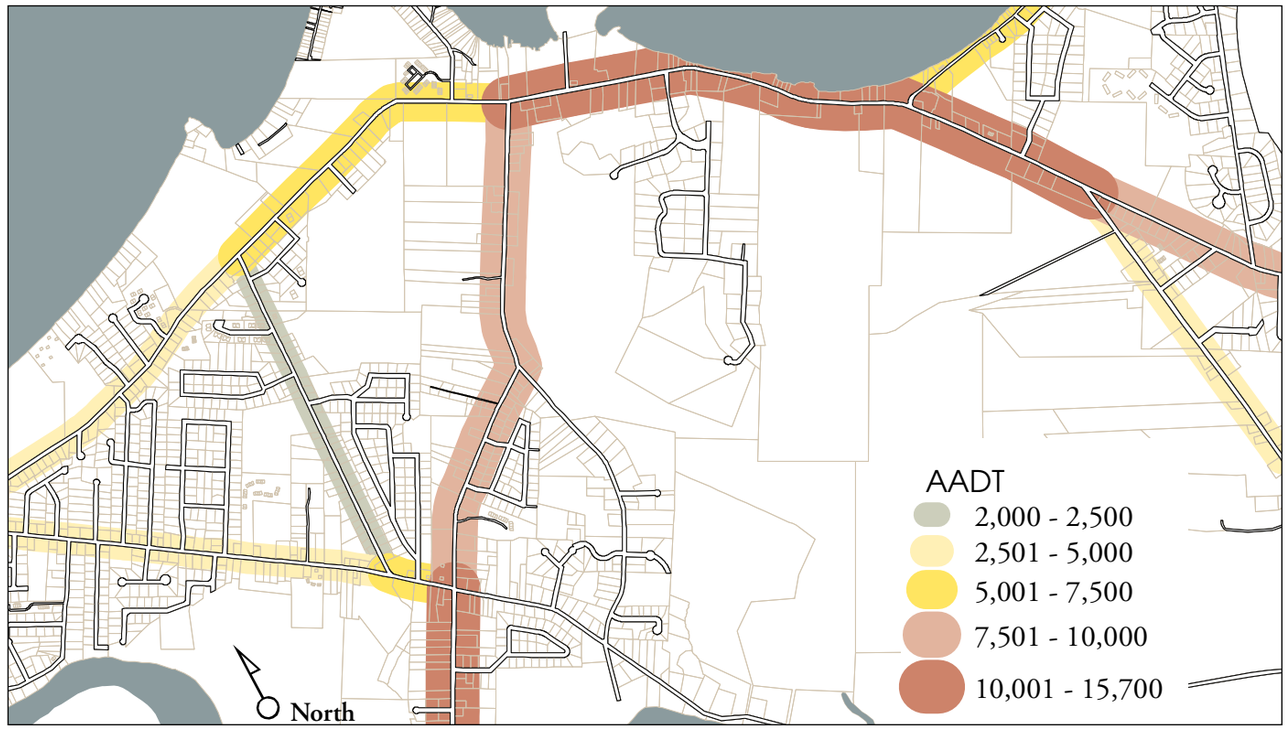
As with the previous forums, discussion was largely focused on transportation issues. There was recognition that land use patterns cannot change unless through traffic is redirected off West Lakeshore Drive. While the concept of a parallel road was widely supported at the 2002-03 forums, it is a long-term solution with many hurdles to overcome including right-of-way acquisition and impacts to sensitive natural resources. Attendees at the 2007 meeting wanted to see a more realistic, achievable plan. Many also cited the Circumferential Highway as the only viable solution to reduce the traffic on West Lakeshore Drive. Given that the state is unlikely to build the western segment of the Circumferential Highway in Colchester in the near-term, participants felt that the proposed parallel road alone would not resolve the issues created by increasing congestion in the corridor. The consultants were asked to recommend a route to bypass through traffic away from the lakeshore.

Residents attending the workshop identified the recently completed sidewalk and crosswalks as a success and expressed a desire for the town to continue the project with construction of the bike path on the lakeshore side of the highway. There was interest in completing Colchester's portions of the regional bike path system to connect the bay

with neighboring communities, including the Burlington waterfront. The fact that West Lakeshore Drive is part of a Lake Champlain Bikeways loop was mentioned, along with the difficulty of biking given the heavy traffic. There was an understanding that the town proceeded with the sidewalk first due to the challenges of constructing the bike path on the north side of the road, including limited right-of-way, steep terrain and property use/ownership. Participants acknowledged that the bike path as shown in the Route 127 Corridor study may not be feasible and asked the consultants to explore alternatives.

The interest in a village-style development pattern remained strong with little support for large-scale resort or commercial development. Recent development at Severance Corners, along with plans to designate that area as Colchester's primary growth center, further bolstered the position that West Lakeshore Drive should not be a focus of significant growth. Attendees expressed a desire for an enhanced waterfront with greater public access and more opportunities for short-term mooring. Amenities like a waterfront restaurant and pocket parks along the shoreline were suggested. Participants wondered whether there were opportunities for parking and boat storage further back from the shoreline that would free up land along the road for other uses. There were concerns expressed that the area should have a viable four-season economy and not become dominated by seasonal businesses.

4. Traffic Levels in the Study Area (VTrans 2005)



TRANSPORTATION SYSTEM

West Lakeshore Drive

West Lakeshore Drive, Vermont Route 127, is classified as a minor arterial linking the cities of Burlington and Winooski to communities to the north and east. Despite this classification, West Lakeshore Drive is not designed or constructed to meet the standards of an arterial highway. As such, significant vehicular issues exist in the corridor. Currently, the average annual daily traffic on West Lakeshore Drive is approximately 14,000 vehicles (see Figure 4).

The 1998 Route 127 Corridor study identified several issues along the West Lakeshore Drive corridor. The high volume of traffic has led to poor levels of service at a number of intersections in the study area, including Prim Road/West Lakeshore Drive. This is particularly evident during the morning and afternoon rush hours when the corridor is used as a major commuter route. Additionally, the study noted that the corridor overall has poor pedestrian and bicycle facilities due to a lack of shoulders, bike lanes and sidewalks. Pedestrian crossing facilities were also lacking, particularly at the Blakely Road/Malletts Bay Avenue intersection. This

5. West Lakeshore Drive Looking East from the Moorings (May 2007)

discouraged pedestrian activity between the recreational uses in the area.

The 1998 Route 127 Corridor Study provided direction for improving the corridor's design including bicycle and pedestrian improvements. These recommendations included:

- Managing traffic to address issues of traffic speed and volume;
- Improving the pedestrian and bicycle experience along the corridor by adding sidewalks, bike lanes, multi-use paths, etc.;
- Improving the pedestrian crossing condition through traffic calming measures;
- Reducing auto dependence by encouraging mass transit and alternative transportation measures;
- Promoting land use patterns that minimize dependence on single-occupancy vehicles and promote pedestrian oriented development;
- Providing street trees and street lighting;
- Developing a signage program to address both vehicular and pedestrian traffic; and
- Reconfiguring the Prim Road/West Lakeshore Drive Intersection for improved vehicular and pedestrian service.

In addition to the above, specific recommendations for West Lakeshore Drive included the construction of five- to seven-foot sidewalks along both sides of the road, and the addition of signalized crosswalks at the Moorings Marina and Shore Acres Drive intersections. Changes to the vertical alignment of the road near the Moorings Marina were also suggested to improve the sight distance issues in that area. As this would create significant impacts to the adjoining properties, an alternative would be increased signage in that area.

With the exception of the sidewalks and several marked crosswalks, the state and town have not implemented this plan due to a lack of funding, although the project is listed in the state's Transportation Improvement Plan. The improvements recommended in the Route 127 Corridor Study would result in improved safety in the corridor; however, they do not address capacity. Colchester's Comprehensive Plan states, "It is the Town's desire to decrease traffic and the need for capacity on this local road."

Parallel Road

Following input received at the 2002-03 forums, Colchester added a proposed alignment for a parallel road to West Lakeshore Drive to its Official Map. As shown on Figure 3, this proposed road extends approximately 1.6 miles from Prim Road east to Laker Lane. This alignment has a number of constraints:

- It skirts the steep slopes of Diversity Hill and depending on its exact alignment could require

a substantial cut to create a safe grade at the intersection with Prim Road.

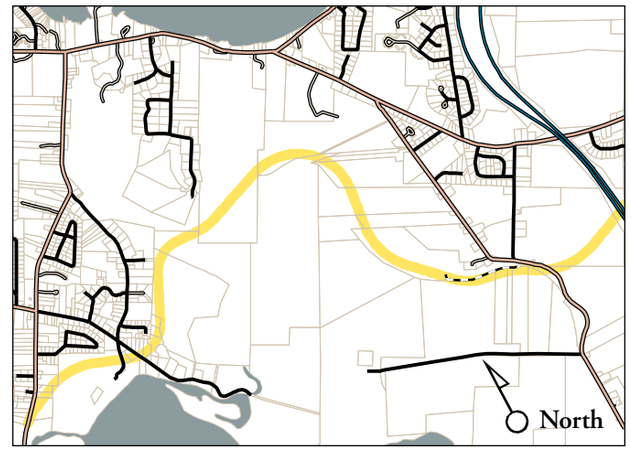
- It passes through the Shore Acres subdivision, necessitating the acquisition of at least two residential properties. It would also result in heavy traffic passing near a number of homes and impact access to all the properties south of the new road.
- It would require a stream crossing and would likely impact the wetlands along the western side of the Hazelett property.
- It would bisect the town recreation area and pass near the school athletic fields.

One benefit of this alignment is that it could be built in several segments. However, until fully constructed, it would likely not serve as an alternate route for through traffic. Even when completed, it may not provide commuters with a route that is more convenient and efficient than West Lakeshore Drive. The parallel road would be more likely to provide an effective alternative for local traffic, especially if a network of perpendicular streets were developed as well.

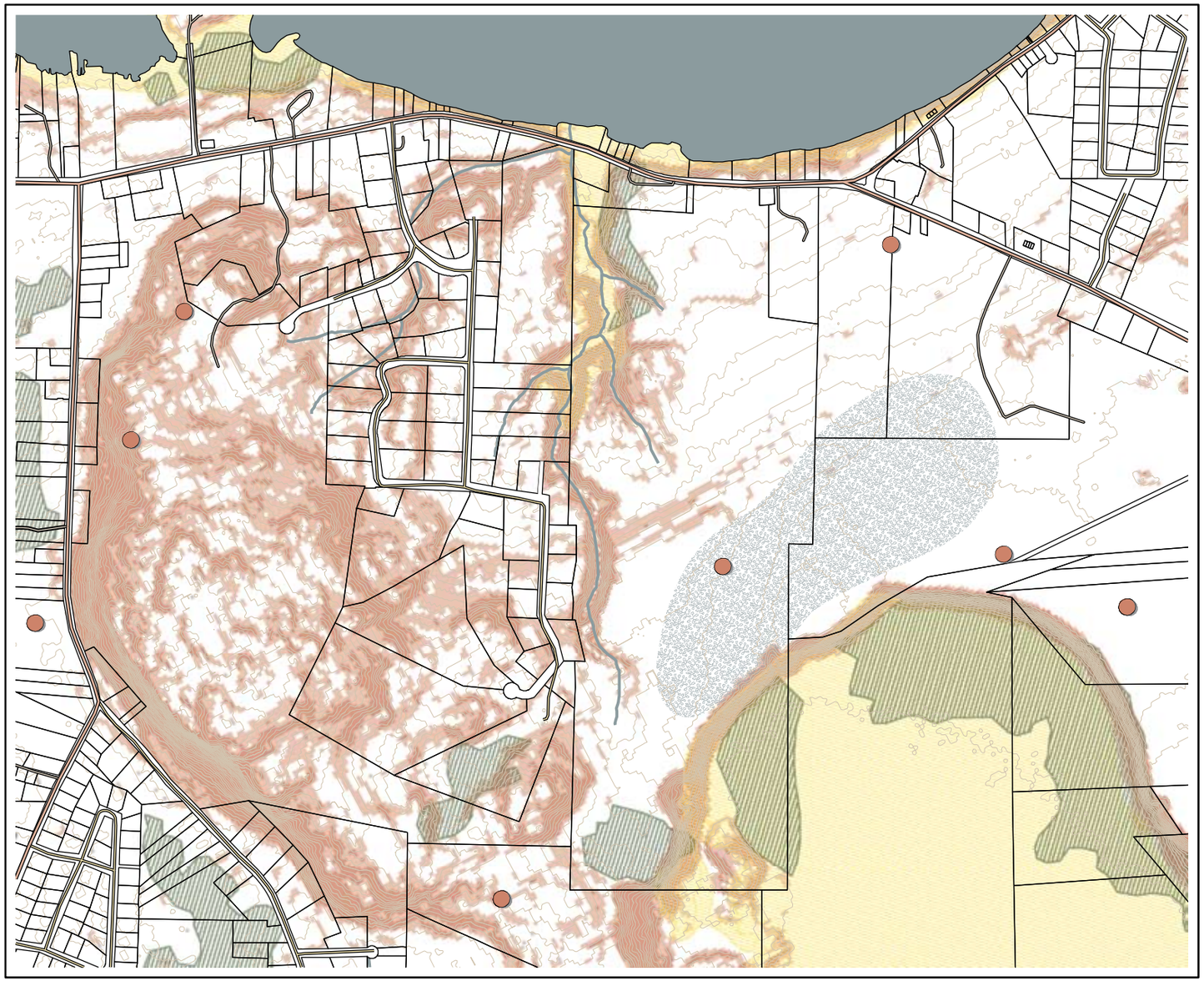
6. Photos of Pedestrian Improvements
Sidewalk on south side of West Lakeshore Drive (above). Signage is used through the corridor to remind drivers to be cautious including florescent cross-walk signs (right).

Circumferential Highway

The planned Circumferential Highway (CIRC) includes a four-mile segment that travels from Heineberg Drive to Interstate 89 along the southern boundary of the West Lakeshore Drive study area (see Figure 7). Agreements for acquisition of the right-of-way for this portion of the CIRC are largely in place, but construction of this segment of the highway is in doubt and certainly will not commence in the near term. The route as proposed has limited impacts on existing development, but does pass through or adjacent to sensitive natural areas including wetlands and sand plain communities. An Environmental Impact Statement for the entire CIRC was prepared in 1986, which included a detailed assessment of the natural resource impacts of the proposed highway. The proposed alignment was designed to limit impacts on those resources to the greatest extent feasible.



7. VTrans' Proposed Alignment of the Circumferential Highway through the Study Area



CONSTRAINTS ANALYSIS

West Lakeshore Drive

Town of Colchester, VT

Map Key

- Natural Heritage Sites
- Sandplain Community
- Wetlands
- Flood Hazard
- No Slope Constraint (<15%)
- Moderate Slopes (15%-25%)
- Steep Slopes (>25%)

Feet
0 500 1,000 2,000

Miles
0 0.125 0.25

North

NATURAL FEATURES AND CONSTRAINTS

Natural features and environmentally sensitive resources are a key component of the project area. Water quality in Malletts Bay is a critical concern that any plan for the West Lakeshore Drive Corridor will need to address. In 2003, the Town of Colchester developed a Strategic Water Quality Plan, which comprehensively evaluated all of the water quality influences, history and current conditions. The plan included recommended actions and the town is working to perform several of the next steps, including resource mapping, stormwater studies, and evaluation of on-site septic system management. More than 25 percent of the land in the study area located within 1,000 feet of the lakeshore is currently covered in impervious surface (parking lots, roads, buildings). Much of the upland area within the study area drains to a stream and wetland complex that runs along the western edge of the Hazelett property and the Moorings marina (see Figures 8 and 9).

Diversity Hill, which rises 240 feet above lake level, dominates the western side of the study area. Its western slope along Prim and Bean roads is extremely steep, while the slope falls off moderately on the eastern side behind the Shore Acres neighborhood. Most of the hill is part of a single large, undeveloped parcel that offers excellent views out to the bay.

Sand plains are a rare natural community characterized by flat, well-drained soil that is acidic and nutrient-poor. The plant community that thrives in these sand plains is largely unique to Colchester. These lands have an open canopy more characteristic of woodlands than forest with pitch pine, white pine, black oak, red oak and heath shrubs predominating. There are only a few remaining undisturbed patches of this natural community remaining in town, one of which is near the Colchester High School. The Vermont Natural Heritage program considers these sand plains to be a Rare and Irreplaceable Natural Area.

PUBLIC LANDS, FACILITIES & INFRASTRUCTURE

There is a significant amount of public land within the study area including:

- The town-owned Bayside Park, which includes three acres of shorelands and 19 acres on the south side of West Lakeshore Drive
- The 14-acre town-owned Bayside parcel between Blakely Road and East Lakeshore Drive

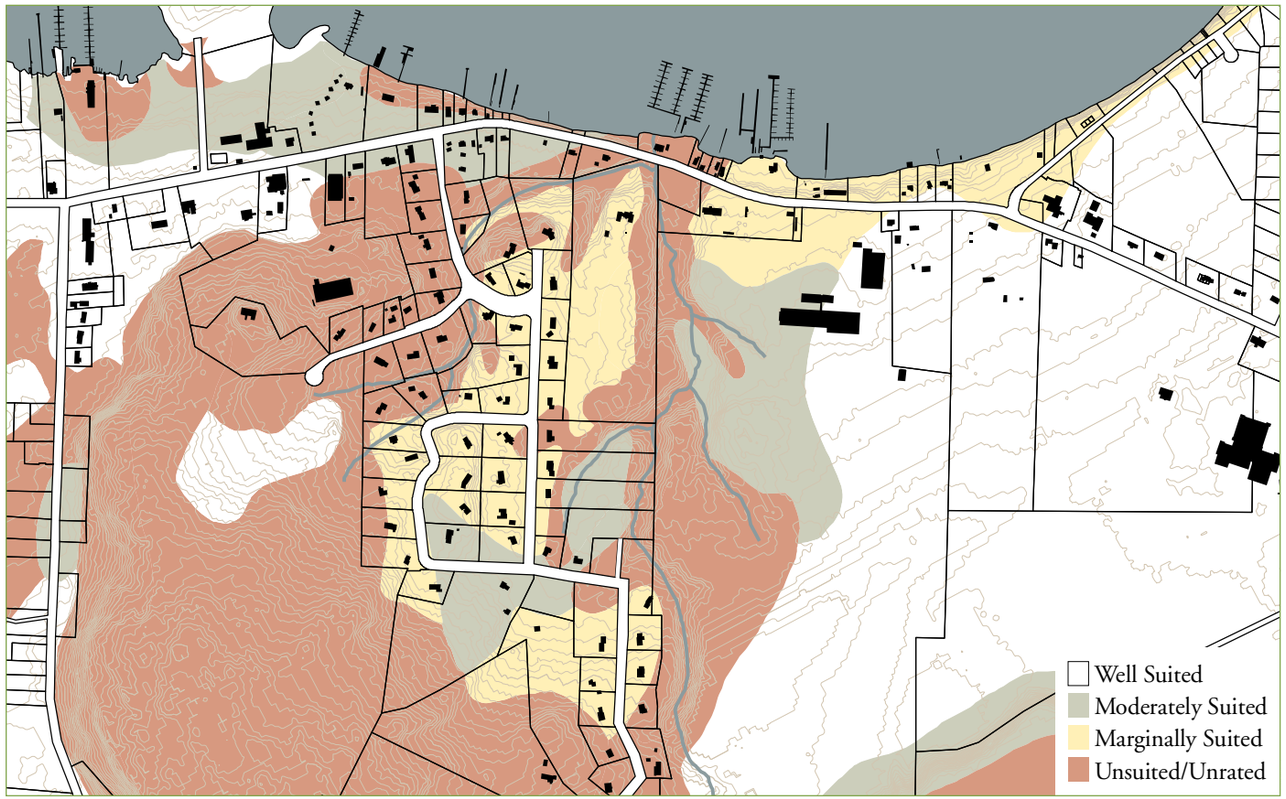
8. Constraints Analysis Map (page 8)
9. View of the Stream/Wetland Complex on the Opposite Side of West Lakeshore Drive from the Moorings (above)
10. View of Malletts Bay from West Lakeshore Drive across from the Hazelett Property (below)

- The Colchester High School property, which totals 104 acres in two parcels
- The state boat launch and parking lot, which is located on two privately-owned parcels totaling 12 acres through agreements with the property owners

Fire District #2 supplies municipal water to all the properties in the study area. While the availability of municipal water has made reliance on conventional, on-site septic systems possible, it is unlikely that sufficient on-site treatment capacity exists to support significant increases in density. Additionally, there are concerns that aging or malfunctioning septic systems near the bay may be contributing pollutants to the lake. The portions of the study area characterized by steep slopes or wetlands are poorly suited for conventional septic systems; there are, however, several large areas with soils likely to be well-suited for soil-based wastewater treatment.

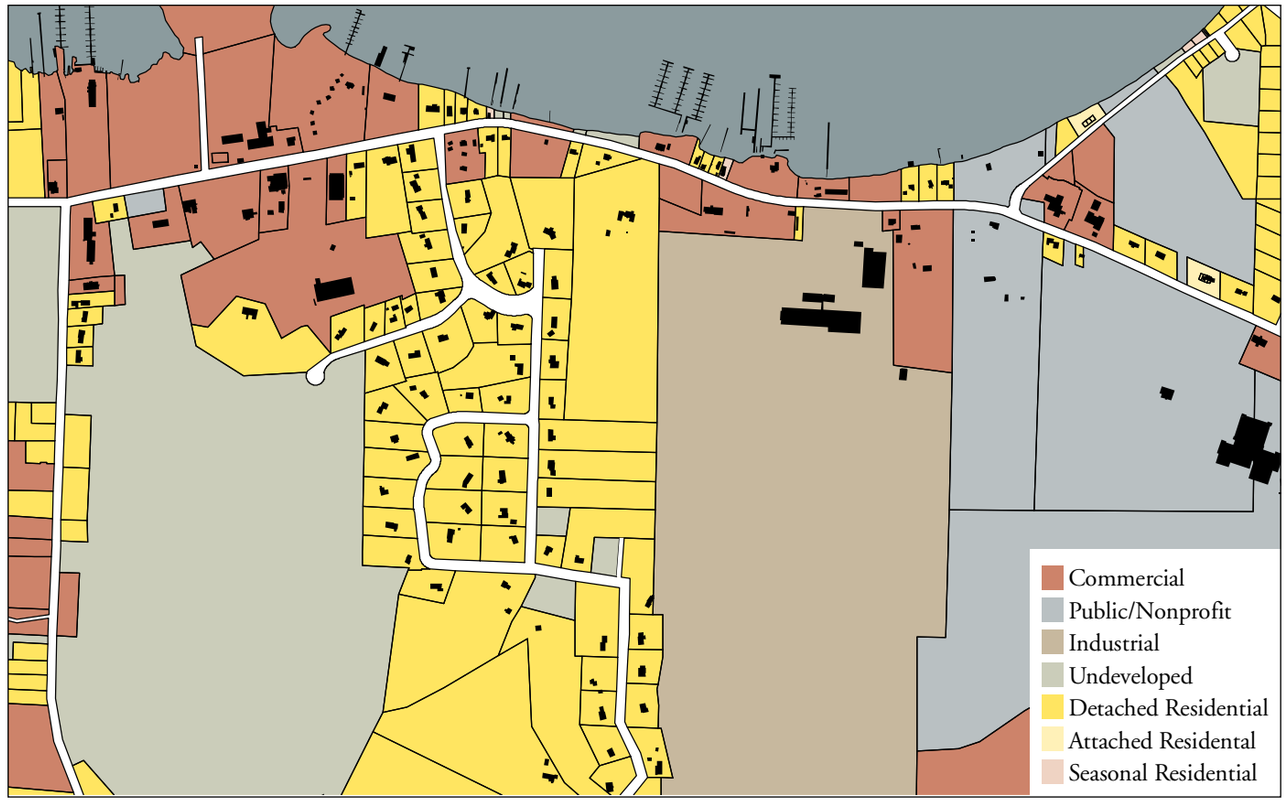
A number of locations, including several parcels in public ownership, may hold potential as sites for community systems that could treat waste collected from nearby developed lands (see Figure 11). Such a decentralized treatment system could provide opportunity for infill and redevelopment along the West Lakeshore Drive corridor without necessitating an extension of municipal infrastructure to the shoreline with its related growth pressure concerns. Stormwater could also be collected and treated in a similar decentralized manner.

11. Suitability of Soils within the Study Area for Septic Systems (NRCS and VTDEC)



12. Decentralized Wastewater Diagram

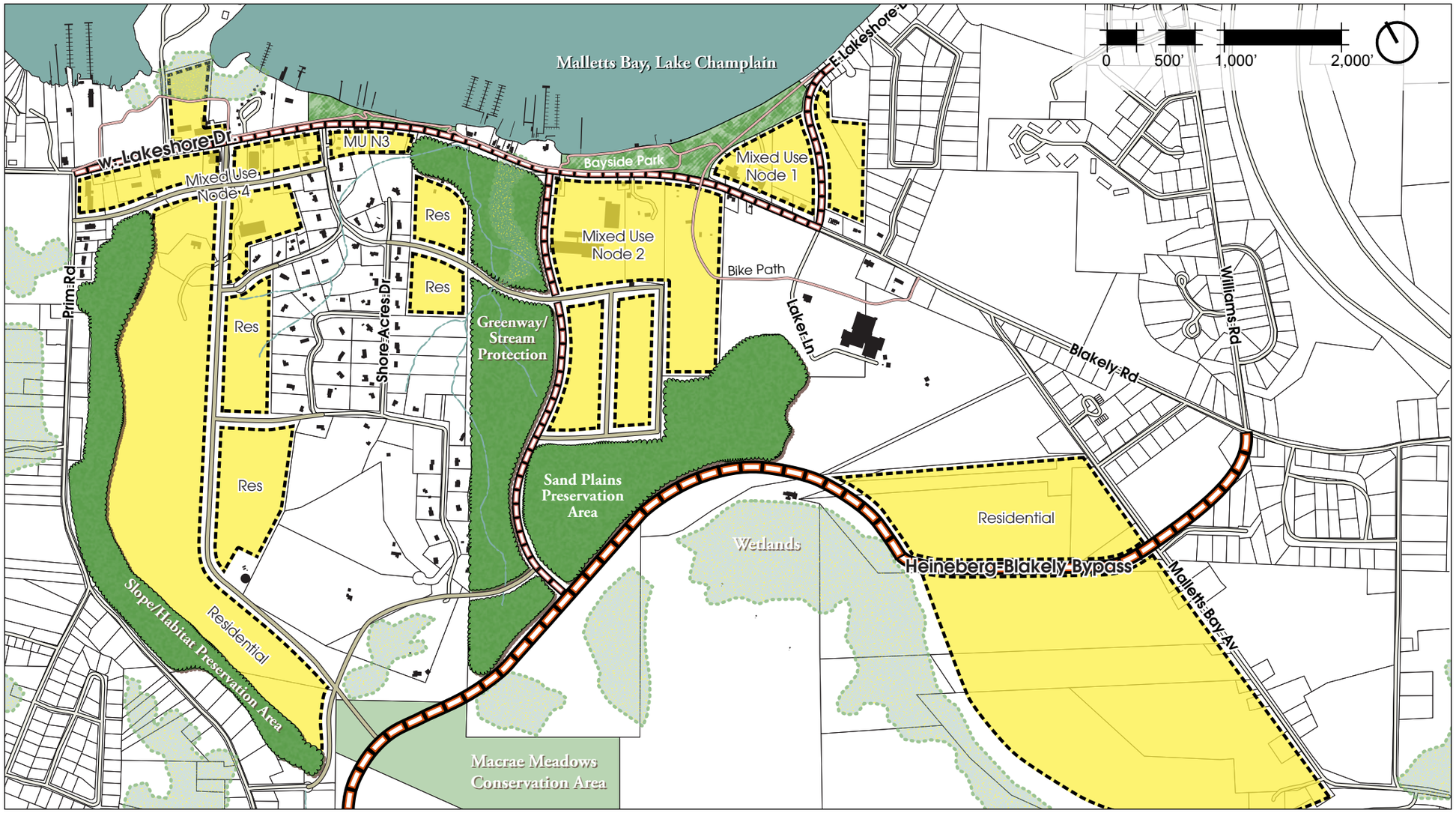
Decentralized wastewater systems include a mix of individual on-site and community septic systems. Advanced treatment options and alternative technologies may be incorporated.



13. Current Land Use within the Study Area (above)
14. Photos of Land Uses along West Lakeshore Drive (left)

DEVELOPMENT PATTERN

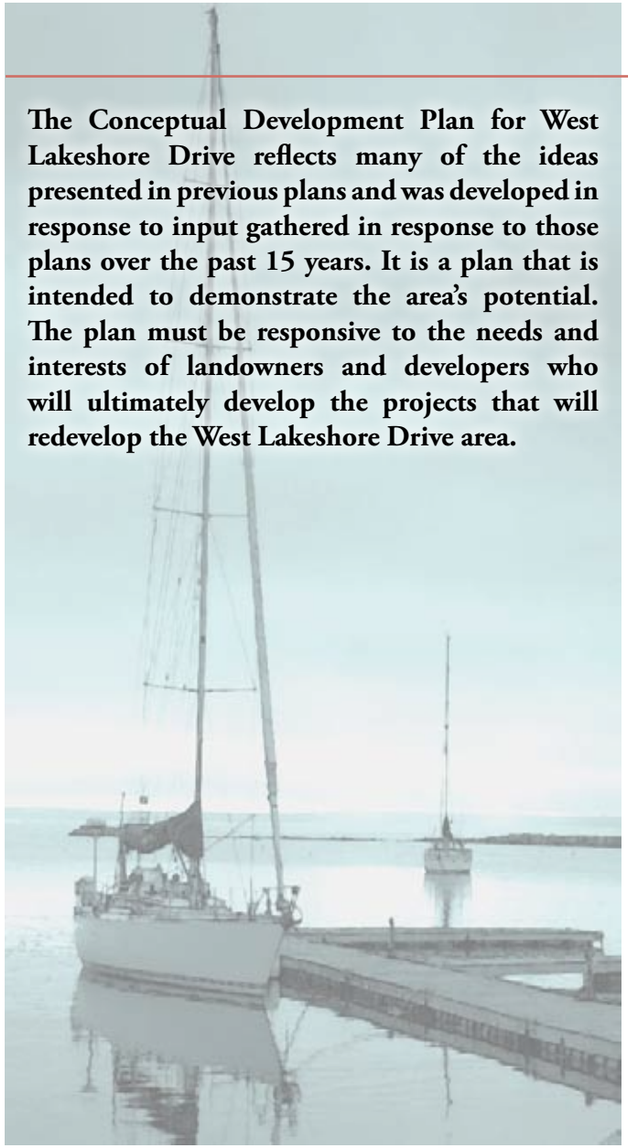
The West Lakeshore Drive Corridor is home to a diverse array of land uses (see Figures 13 and 14). There are a number of single-family homes along the road, in addition to the Shore Acres neighborhood. Water-based recreation uses include Jakes Marina, Moorings, Coates Marina, International Sailing School, Malletts Bay Boat Club and Champlain Marina, along with the state boat launch adjacent to Champlain Marina and the town beach at Bayside Park. The major retail uses include Harbor View Plaza, Mazza's General Store, Ace Hardware and Bayside Point Plaza; there are a number of small businesses along the highway as well. Finally, the Hazelett Strip Casting manufacturing facility anchors the eastern end of the corridor.



15. Conceptual Development Plan for the West Lakeshore Drive Study Area

conceptual development plan

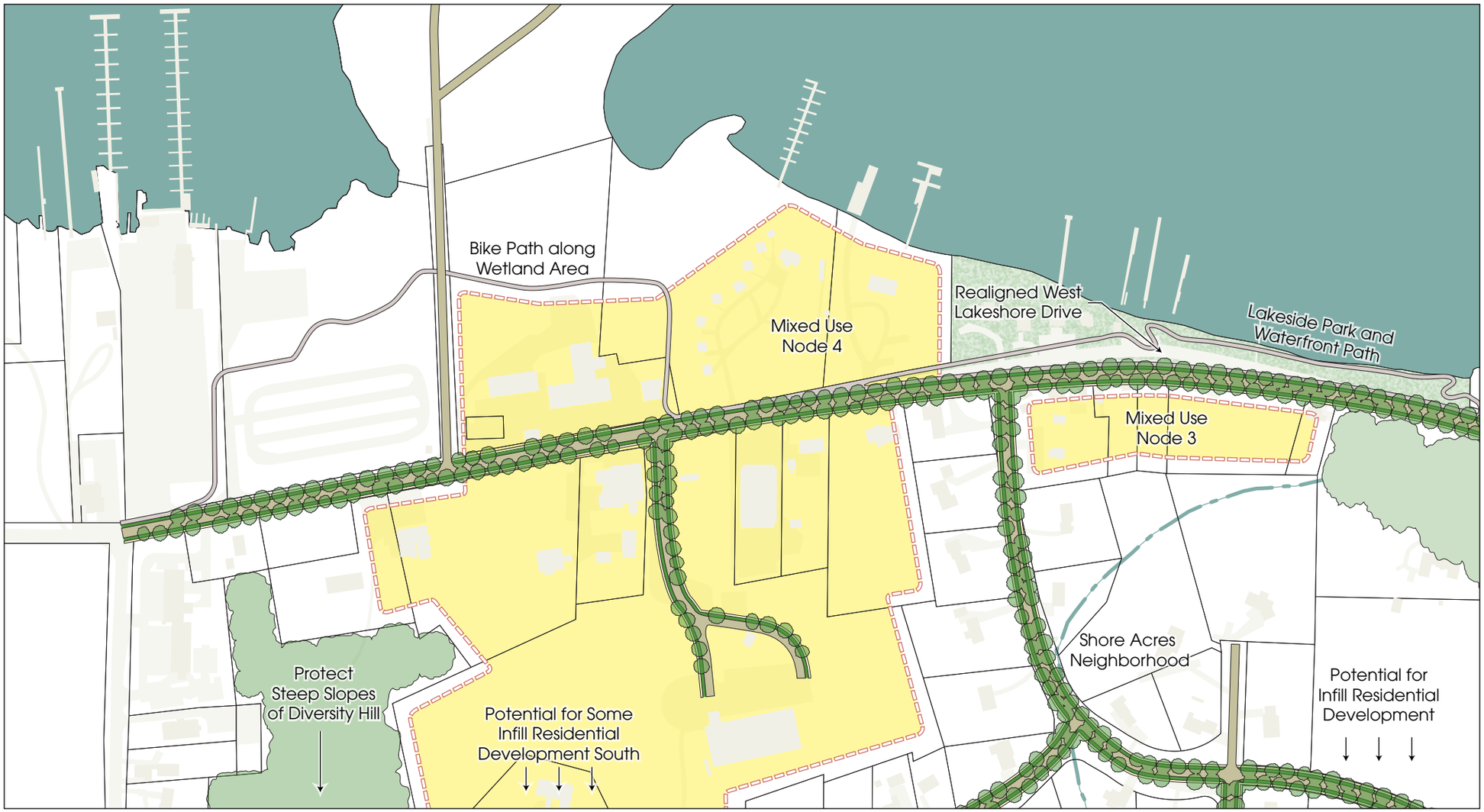
The Conceptual Development Plan for West Lakeshore Drive reflects many of the ideas presented in previous plans and was developed in response to input gathered in response to those plans over the past 15 years. It is a plan that is intended to demonstrate the area's potential. The plan must be responsive to the needs and interests of landowners and developers who will ultimately develop the projects that will redevelop the West Lakeshore Drive area.



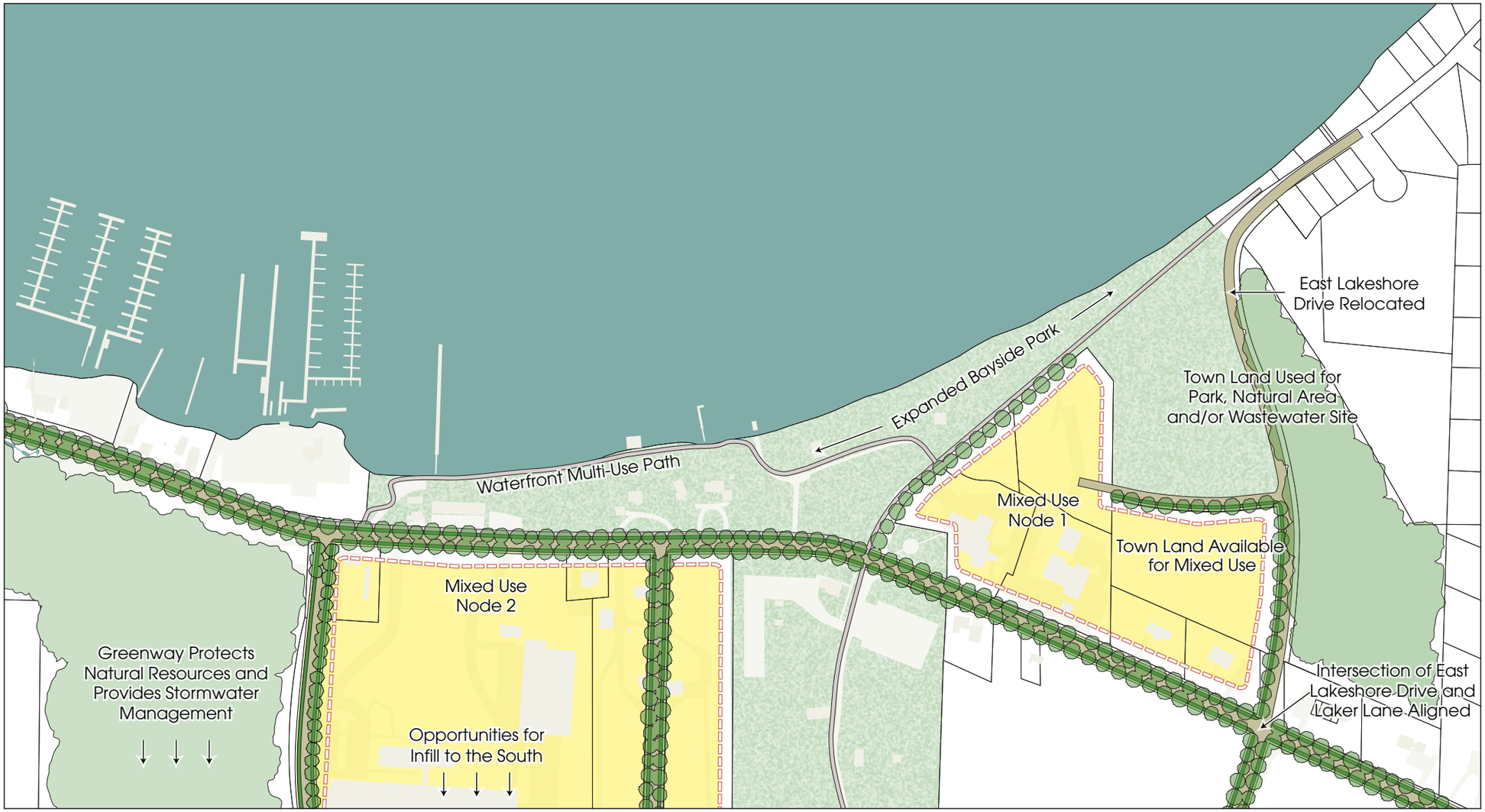
Vision Statement

To enhance the West Lakeshore Drive corridor so that Malletts Bay can establish an identity as an attractive destination for visitors while remaining a center of community life for residents.

- To promote mixed-use development along West Lakeshore Drive in multi-story buildings and shops set close to the street that will create an inviting, pedestrian-friendly atmosphere amplified by public access to and views of Malletts Bay.
- To become a recognized premier waterfront venue on Lake Champlain by enhancing existing public and private waterfront facilities, increasing public access to Malletts Bay, and encouraging more short-term mooring and docking to attract boaters and visitors/tourists to West Lakeshore Drive.
- To encourage walking and biking by developing an interconnected greenway system of sidewalks, recreation paths and a lakeside bikeway alongside West Lakeshore Drive.
- To improve water quality and important environmental resources by ensuring future development is designed with limited impacts on natural systems and by planning for the infrastructure necessary to not only prevent pollution from entering the Bay but to mitigate existing discharges.



16. Conceptual Development Plan for the West Lakeshore Drive (West Detail)



16. Conceptual Development Plan for the West Lakeshore Drive (East Detail)

CONCLUSIONS AND RECOMMENDATIONS

The vision set forth above cannot become a reality unless traffic levels on West Lakeshore Drive can be significantly reduced by redirecting a large percentage of commuters onto another route. An alternative road near West Lakeshore Drive is needed to accommodate commuter traffic, but opportunities are limited due to terrain, natural resource constraints and existing development patterns. The analysis completed as part of this planning process indicates that the best alternative for a bypass is a modified alignment of the proposed route for the Circumferential Highway (see Figure 15). This alignment:

- Provides a direct, convenient route that commuters will use unlike a parallel road closer to West Lakeshore Drive.
- Has much less impact on existing development than a parallel road closer to West Lakeshore Drive.
- Avoids the steep terrain of Diversity Hill.
- Circumvents and protects important community resources such as schools, recreation areas and paths.
- Has been previously engineered and the state has acquired most of the right-of-way.

In coordination with VTrans, this plan calls for the town to take the lead and construct a local, two-lane road in this alignment to bypass commuter traffic from Heineberg Drive to Blakely Road, which would serve the town's immediate need to redirect traffic away from West Lakeshore Drive irrespective of whether all segments of the CIRC Highway as currently proposed are ever built. If this portion of the CIRC were to become a reality, the bypass could be upgraded to a limited access highway at a future time.

THE PLAN

The conceptual development plan for the West Lakeshore Drive Corridor includes the following:

Transportation Enhancements

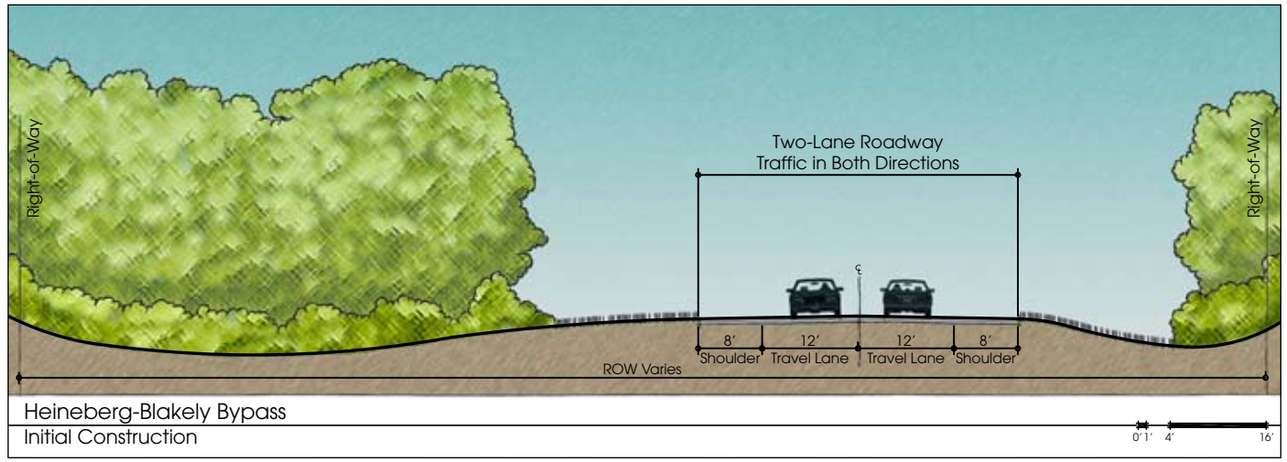
The proposed Heineberg-Blakely Bypass is approximately 2.6 miles long in its entirety; two miles of which would be in the CIRC right-of-way. The roadway would diverge from the CIRC alignment at the Brigante property (off Malletts Bay Avenue) and intersect Blakely Road directly across from William Road. The bypass would be a two-lane arterial street with a paved width of 32 feet, primarily serving through traffic as shown in Figure 17. The number of connecting streets should be limited and the bypass should not serve to provide access to adjacent properties.

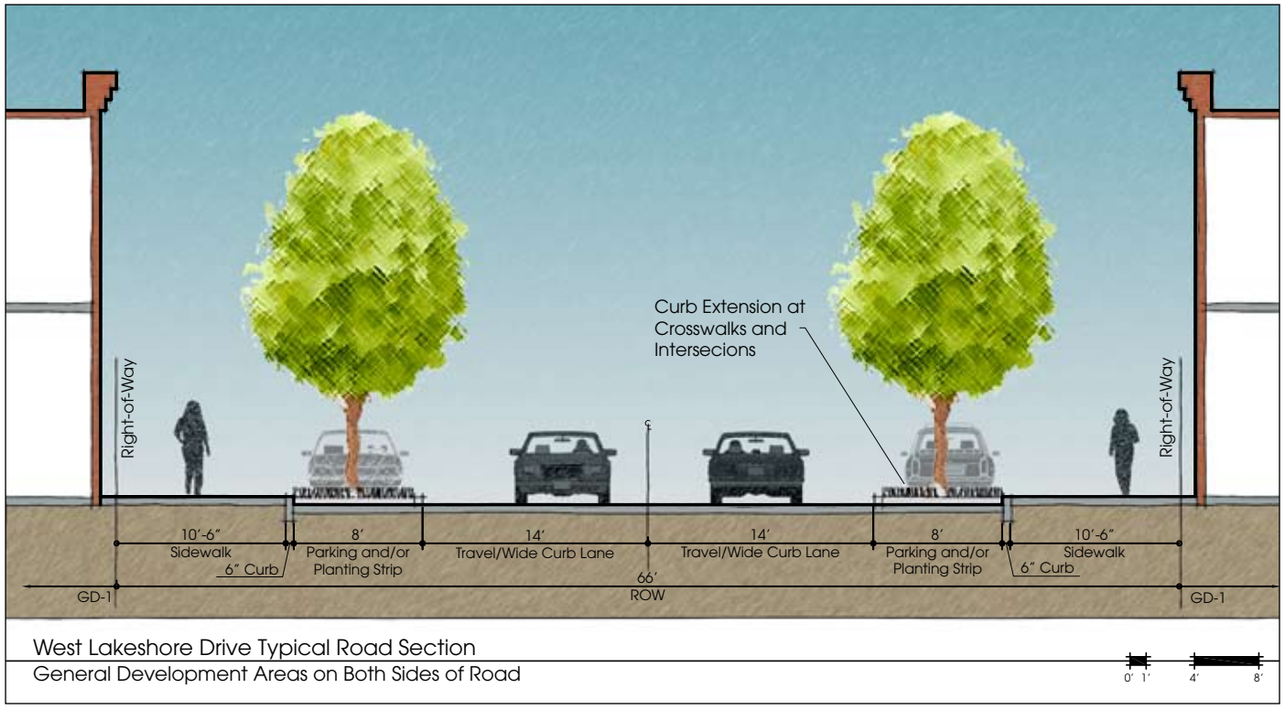
The long-range plan also shows a north-south connector between the proposed Heineberg-Blakely Bypass and West Lakeshore Drive running through the Hazelett property. This road would delineate the eastern edge of a proposed greenway incorporating the stream corridor and associated wetlands. The greenway road corridor should include sidewalks and/or multi-use paths and parking that will allow recreational use and access to this natural area.

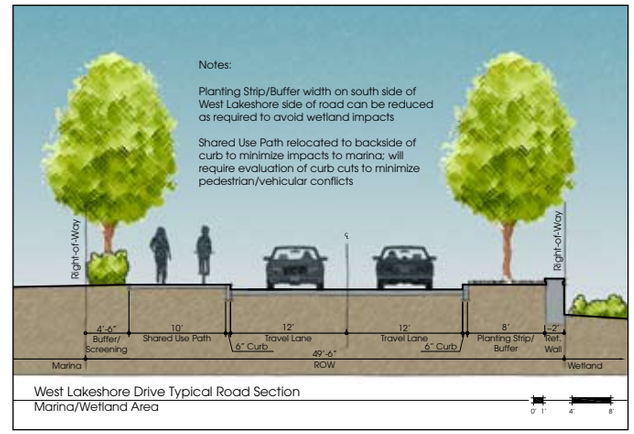
To support a village-style pattern of development, the plan also illustrates a system of interconnected neighborhood streets. Several of these proposed streets connect to existing roadways, while others would be dependent on future development. The ultimate goal of such a system of streets is to link neighborhoods and businesses, disperse local traffic and promote a sense of community in the West Lakeshore Drive area. Neighborhood streets should have narrow lanes with sidewalks and street trees to slow traffic.

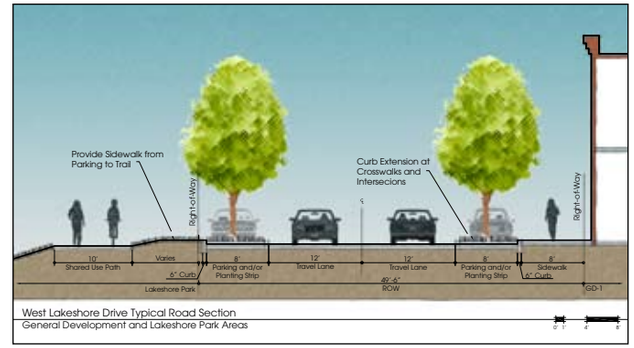
The plan includes the modifications of the West Lakeshore Drive alignment to move the road back further from the

17. Cross Section of the Heineberg-Blakely Bypass









18. Cross Sections of West Lakeshore Drive by Section

shoreline recommended in the 1998 Route 127 Corridor Study. Such a relocation would decrease the road's impact on the shoreline, reduce potential for erosion and direct runoff, and create opportunities for the lakeside bike path and potentially additional public access to the shore.

Finally, the plan proposes a realignment of East Lakeshore Drive through the town-owned Bayside property to form a four-way intersection with Blakely Road and Laker Lane. This would allow for an expansion of Bayside Park and further discourage through traffic on West Lakeshore Drive. It would also provide for direct access to the school, which is a major generator of traffic in the mornings and afternoons. This would promote more efficient traffic patterns in the area.

Recreation and Public Access

In order to provide public access, preserve views of the bay and protect water quality, this plan recommends that little further development occur on lakeside lots that are characterized by limited depth. The town should seek opportunities to acquire these lands over time with the long-term goal of creating a linear park system on the north side of West Lakeshore Drive. Colchester could explore establishing a conservation fund dedicated to this purpose so that money would be on hand to buy land if it was available for purchase. Existing water-based uses are anticipated to remain on the north side of the road, but the town should seek opportunities

to partner with these private landowners to enhance public access through their properties. To facilitate public access to the expanded lakeshore park and green spaces, on-street parking should be utilized where feasible to reduce the need for additional surface parking lots.

Like the Route 127 Corridor Study, this plan proposes a bike path on the north side of West Lakeshore Drive, but with some modifications to its alignment. Where possible, the path should be located further from the road and closer to the shoreline to provide a more pleasant experience for cyclists and pedestrians. Where the right-of-way is constrained by land use or steep terrain, the path will need to be located alongside, or potentially on, the road however.

Protection of Important Natural Resources

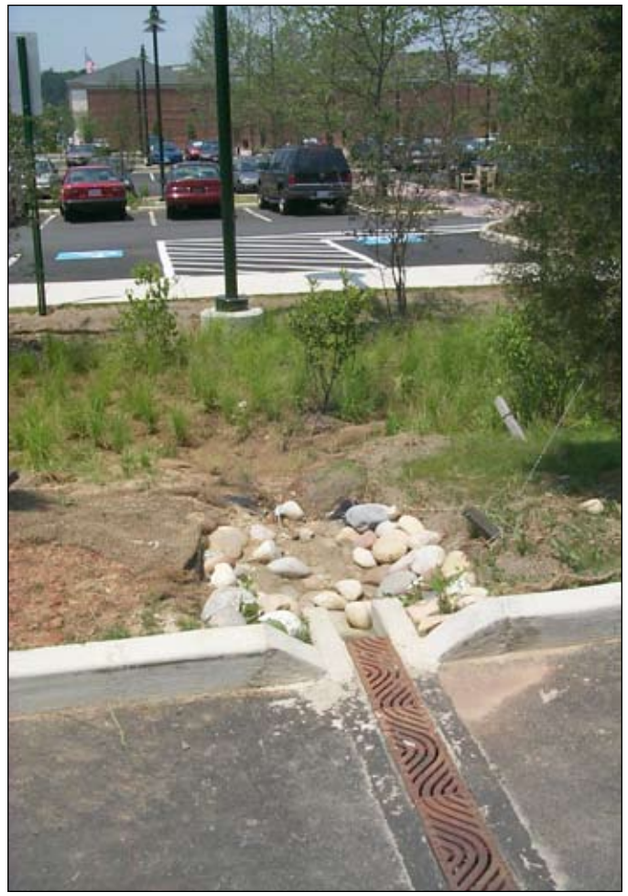
As described above, this plan proposes that the stream corridor and associated wetlands east of the Shore Acres neighborhood and west to the Hazelett property remain undeveloped as a greenway. This area could be enhanced to provide stormwater collection, treatment and infiltration functions, as it is the natural drainage area for a significant portion of the West Lakeshore Drive area. This north-south greenway would also serve as a wildlife corridor linking the sand plain and wetland areas to the south to the bay. The greenway could also provide recreational opportunities such as a nature trail linked to the town's path system.

The plan also recommends that the sand plains natural community be preserved in an undisturbed state to the greatest extent feasible. The town should update the resource inventory completed in the early 1990s to assess the extent and current condition of the sand plains natural community near Colchester High School. An area should be delineated that can function as a viable example of this rare natural community and it should be preserved in its natural state in perpetuity.

On the western edge of the study area, the plan proposes that the steep slopes of Diversity Hill be conserved and maintained in their natural wooded state. This provides another north-south wildlife corridor linking the Macrea Meadows conservation area to the bay. Development densities should be reduced on Diversity Hill with incentives for development sited to protect natural and scenic resources.

Stormwater Management

The quality, quantity and rate of stormwater runoff are directly related to the total amount of impervious surfaces, the intensity of development, and the configuration of land uses in the study area. As there is already significant concern for water quality in West Lakeshore Drive area and for the bay in its entirety, the town must proactively protect its resources through the use of innovative techniques and common sense development patterns.



19. Stormwater Management System in a Parking Lot

Stormwater is collected in concave parking lot islands and allowed to infiltrate into the soil. Stormwater flows directly into the basins through breaks in the curb, as well as a piped collection system. If water reaches a certain height within those basins, it flows into a conventional stormwater collection drain. These systems are designed to drain water within a 24-hour period to eliminate the potential for mosquito development.

20. Stormwater Management as Streetscape (below & right)

Rain gardens can be incorporated into village center streetscapes. These double as planting beds. As with other rain gardens, they are designed to hold stormwater, allow it to infiltrate into the soil, reduce runoff and minimize impacts to stormwater systems. Water flows directly from the sidewalk and road into the basin. They are planted with flood-tolerant species.

As outlined above, this plan proposes that the areas along the lakeshore, sand plains, Diversity Hill and stream complex east of the Shore Acres area be protected by extensive pervious buffers such as turf grass and mixed woody plantings. In these areas, paving should be limited to the greatest extent possible and alternatives pursued to minimize the overall impervious area. Where possible, pervious materials such as mulch, gravel and pervious concrete/asphalt should be utilized. The lands closest to the bay already have a very high percentage of impervious surface and options for improving stormwater management on existing developed sites should be explored.

Current stormwater management techniques where distributed systems that treat water near the source of runoff are preferred over centralized collection systems. Rain gardens can be incorporated into the streetscape patterns (see Figure 20). Where vehicular parking lots are required, innovative stormwater techniques such as rain gardens, infiltration trenches, etc. should be utilized within the lots to capture and

21. Stormwater Outfall (above)

Riffle pools, waterfalls and irregular drainage channels are intended to increase oxygenation of the water and improve its overall water quality.

22. Driveway Constructed of Porous Concrete (above)

filter as much runoff as possible. New building construction should be encouraged to use green roofs, cisterns, rain barrels and other water harvesting techniques. New development should be required to keep post-development off-site runoff to pre-development levels, with incentives provided to those who reduce off-site runoff.

Land use and zoning strategies that reduce the amount of a site developed should also be explored. In mixed-use or commercial areas, the use of shared parking facilities should continue to be used as a means of reducing the overall parking required. Density credits could be given to those developers who build multi-story units rather than single story units in this area of town, as is already done elsewhere in Colchester.

23. Examples of Mixed-Use, Multi-Story Buildings (below & right)

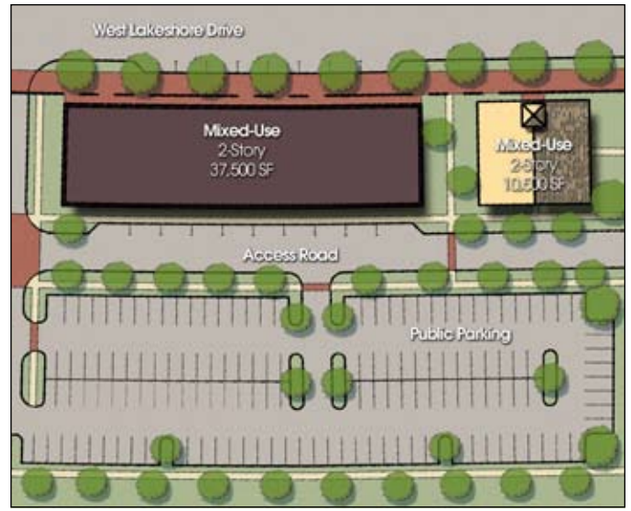
These photos illustrate the scale, type, placement and character of development that would be appropriate in those portions of the West Lakeshore Drive corridor designated for commercial and mixed uses.

Development Types

The plan envisions that over the long-term the lands fronting on West Lakeshore Drive, not including those parcels to the north with limited depth, will be redeveloped to create areas characterized by a village pattern of development. As shown in Figures 23 and 24, that village pattern will be created through construction of two- and three-story buildings located on or near to the sidewalk edge. The first floor of these structures will be largely retail and restaurant uses with housing and offices on the upper floors. Parking will be provided on street, as well as behind new buildings and in the interior of new blocks.

24. Sample Site Plan (below)

Redevelopment scenario with mixed-use, two-story buildings constructed close to the sidewalk, which also have access from a backage road to allow travel between uses without the need to enter and exit West Lakeshore Drive. Public parking is provided behind the buildings.



The rear of the blocks adjoining West Lakeshore Drive may also provide opportunities for attached housing. To the south of the West Lakeshore Drive Corridor, the plan envisions mainly infill residential development of single-family, detached homes similar in density to the existing neighborhoods in the area.

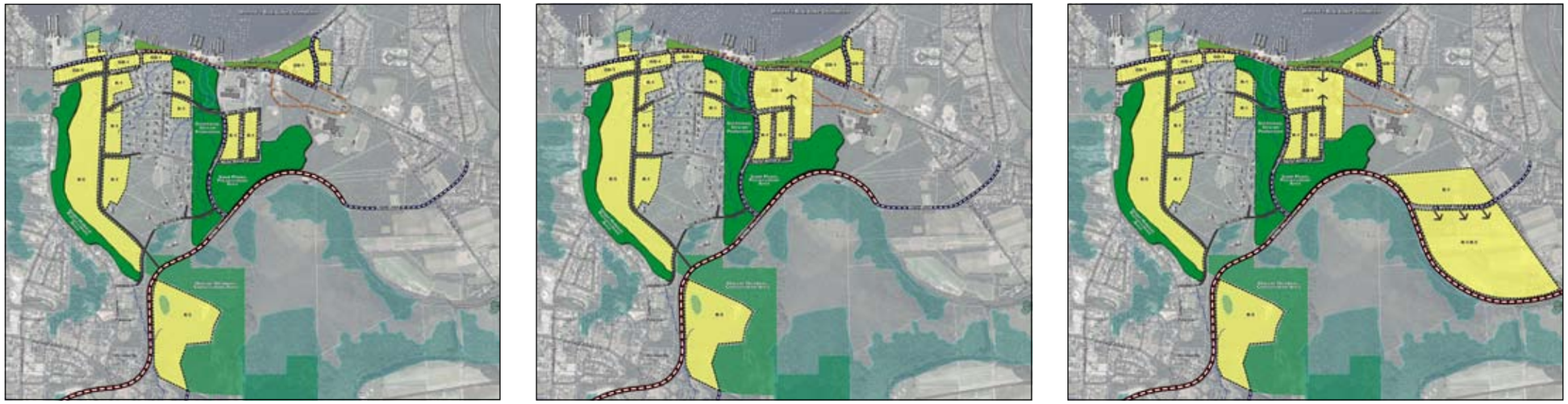
25. Examples of Attached Housing (above and below)

Attached housing within the study area should employ techniques to create architectural interest.

The density and siting of housing possible within the study area will depend on whether adequate capacity for wastewater treatment exists either on-site, in a decentralized or community system or through provision of municipal wastewater. Within those areas characterized by moderate slopes or other natural resource constraints, cluster development (PUDs) would allow house sites to be located to minimize environmental or visual impacts.

26. Examples of Single-Family Housing (right and below)

New neighborhoods within the study area should be architecturally varied. Clustering of homes on small lots with shared public spaces or protected natural areas should be encouraged.



27. Phases of the Conceptual Development Plan: A. Construction of Bypass (left); B. Neighborhood and Street Network Development (center); and C. Completion of CIRC (right)

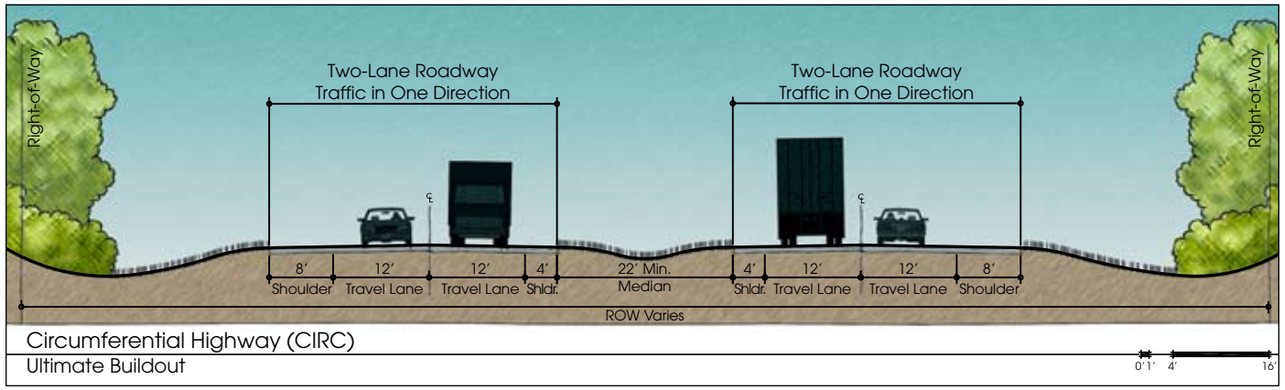
Proposed Phasing

This plan presents a long-term vision for the West Lakeshore Drive area. Many of the public improvements proposed in the plan may take decades to accomplish and redevelopment of existing properties is likely to occur slowly. The following phasing of public improvements is recommended:

- Phase I - Heineberg-Blakely Bypass and bike path on the north side of West Lakeshore Drive
- Phase II – Realignment of West Lakeshore Drive and stormwater/wastewater infrastructure
- Phase III - Land acquisition/conservation and realignment of East Lakeshore Drive

Figure 27 illustrates how development/redevelopment and associated road construction might proceed over time. The road network that is developed must function independently of the proposed Heineberg-Blakely Bypass, which might ultimately be converted to a limited access highway should the Circumferential Highway be completed through Colchester.

28. Cross-Section of CIRC Highway



PUBLIC IMPROVEMENTS

To implement the vision for the West Lakeshore Drive area set forth in this plan, Colchester will need to continue its efforts to address transportation problems, revise its land use regulations, support provision of wastewater and stormwater infrastructure, and acquire and maintain lands for public recreation and resource protection.

TRANSPORTATION ENHANCEMENTS

As described elsewhere in this plan, to redevelop this highway commercial strip into a pedestrian-friendly village center, significant improvements to the road network will be required - most notably re-routing through traffic off West Lakeshore Drive. The transportation improvements envisioned in this plan are detailed in Figure 29.

Official Map

To further the implementation of this conceptual development plan, Colchester should consider including the proposed bypass and north-south greenway connector on its Official Map. The Official Map is adopted by the Selectboard and indicates the location of future planned public facilities and infrastructure. It provides a picture of

Transportation Enhancement	Description	Priority	Length	Cost	Comments
Heineberg-Blakely Bypass	Alternative route to West Lakeshore Drive for through/commuter traffic following the proposed CIRC route from Heineberg Drive to the Brigante property with a connection to Blakely Road at the Williams Road intersection.	High	2.3 miles	$4.6 - 18.4 million ($2 - 8 million per mile)	Highway construction costs are strongly linked to petroleum prices, which have been escalating rapidly in recent years. Road construction projects over the past eight years in Vermont have ranged between $1 and $3 million per mile. However, research into more recently completed projects in other states suggests those figures may be too low for an estimate of future costs. The MPO has been using a 4% annual inflation rate in their project estimates. The proposed bypass may have some cost savings over comparable projects however because of the previous acquisition of right-of-way and the preliminary engineering completed for the CIRC. To more accurately estimate construction costs, Colchester will need to work with the MPO and VTrans. As a next step, Colchester should consider forming a task force to begin the process of discussing use of the CIRC right-of-way for a bypass with VTrans and the MPO.
Realignment of West Lakeshore Drive	Realignment recommended in the Route 127 Corridor Study to increase sight distance and pull road back from lakeshore.	Medium			See Route 127 Corridor Study for further information about proposed improvements. This project remains listed in the MPO's TIP with an estimated construction cost of $10.4 million, but it has not been awarded funding.

29. Proposed Transportation Enhancements within the West Lakeshore Drive Area

Transportation Enhancement	Description	Priority	Length	Cost	Comments
Realignment of East Lakeshore Drive	Realignment of East Lakeshore Drive through the town-owned Lakeside Property to form a four-way intersection with Laker Lane.	Medium	0.3 miles	$0.6 - 2.4 million ($2 - 8 million per mile)	This project would require little right-of-way acquisition. It would require the installation of a traffic signal at the intersection.
Greenway Drive South	North-south connector between the proposed bypass to south of the Hazelett Strip Casting facility.	Low	0.5 miles	$1 - 4 million ($2 - 8 million per mile)	Ideally, there should be one connecting road between the bypass and West Lakeshore Drive, which could become an entrance/exit should the bypass be upgraded to the limited access CIRC highway. This road could be built in segments in response to future development patterns. The exact alignment of this connecting road would need to be determined through a more detailed engineering study.
Greenway Drive North	North-south connector between Hazelett's and West Lakeshore Drive.	Low	0.2 miles	$0.4 - 1.6 million ($2 - 8 million per mile)	
West Lakeshore Drive Bike Path	Bike path on the lake side of the roadway.	High	1.2 miles	$95,000 to $190,000 ($15 to 30 per lineal foot) This does not include any right-of-way acquisition.	See Route 127 Corridor Study for further information about the bike path. Where the right-of-way is constrained it may be necessary to accommodate bicycle traffic through an on-road bike lane or acquire additional right-of-way, especially if this project is undertaken without the realignment of West Lakeshore Drive. The proposed bike path does move away from the road behind the Harbor View shopping plaza and passing through neighboring properties. This would require some right-of-way acquisition but would provide a more pleasant and safe ride for cyclists.
Waterfront Multi-Use Path or Boardwalk	Bike path and/or pedestrian boardwalk adjacent to or overlooking the bay.	Medium			The conceptual development plan shows two segments of shoreline path or boardwalk totaling 1,600 feet in length. This element would require acquisition of additional public waterfront or rights-of-way on private property. The cost of this element would depend on its length, width, design and proposed surface, in addition to land or right-of-way acquisition costs.
Heineberg-Blakely Bypass Bike Path		High	2.3 miles	$180,000 to $365,000 ($15 to 30 per lineal foot)	The construction cost for this path would likely be at the lower end of the price range if it were part of the original road construction project.

the town's intentions with regard to future physical form and design.

Colchester has the authority to acquire the easements or land needed to implement a public improvement shown on the map. The map can also be used during the development review process to ensure that facilities and infrastructure built by private developers are coordinated to result in a well-planned network of roads, trails, pipes, etc.

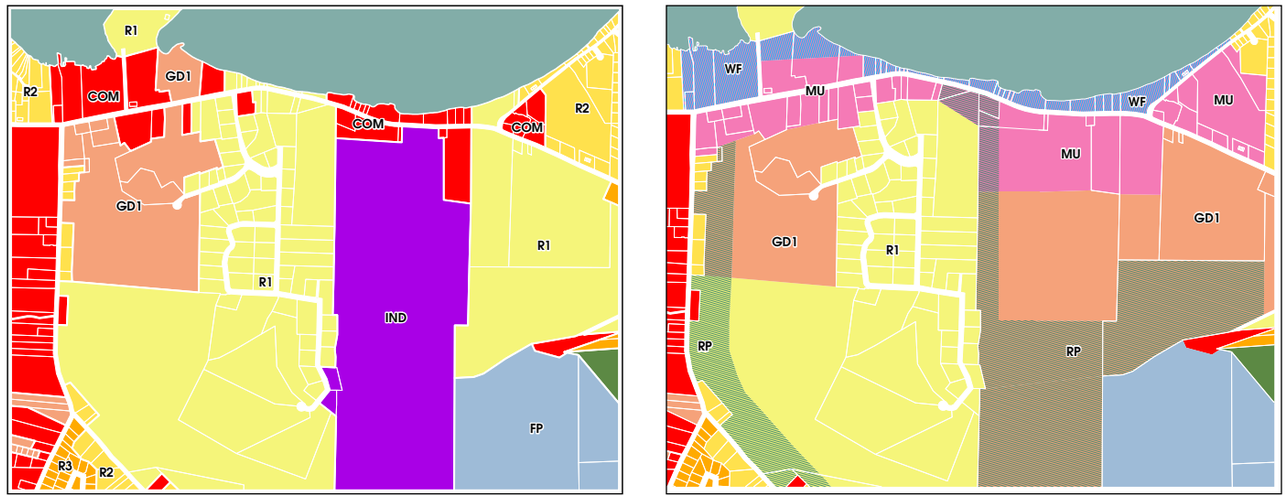
REGULATORY CHANGES

The Town of Colchester can, through its zoning regulations, change the permitted types and patterns of development along West Lakeshore Drive. Currently, the land fronting on the highway is generally zoned into districts based on current property use - residential properties are in a residential district, businesses in the commercial district, manufacturing in an industrial district, etc. - that follow parcel boundaries.

The allowed uses and dimensional standards of the existing commercial and industrial districts are not compatible with the vision of the pedestrian-friendly, mixed-use development pattern described in this plan. To allow for the desired re-development of this highway commercial strip to a mixed-use village center, Colchester will need to amend its zoning. Recommended revisions and suggested standards are described below.

Land Use Areas

By revising the zoning regulations within the "re-development pods" shown on the conceptual development plan, Colchester can establish specific dimensional, use and design standards appropriate for implementing the vision for the West Lakeshore Drive area. As shown in Figure 31, some changes in the types of uses allowed within the West Lakeshore Drive area are desirable, but many of the business uses now allowed are appropriate for a "downtown" setting.



30. Map of Current Zoning Districts (left) and Proposed Land Use Areas (right)

Note: Existing zoning districts in the area include: IND - Industrial, COM - Commercial, and GD-1 - General Development One. Proposed land use areas include MU - Mixed Use, WF - Waterfront and RP - Resource Protection.

The critical components of promoting the desired development pattern are the dimensional and design standards. The concept for these areas is to allow a wide range of land uses - from residential to manufacturing - and focus instead on regulating the physical form of future development and the off-site impacts of proposed uses to ensure they are compatible with the vision.

The waterfront lands on the north side of West Lakeshore Drive are envisioned by this plan as appropriate for recreational, tourism-supporting and water-based business uses. Colchester's existing Shoreline Overlay district provides significant resource protection, but it does not limit the uses allowed within the underlying districts. To achieve the long-term vision, a modified overlay in this area could be used to prevent further incompatible development with the goal of using waterfront property to its greatest advantage for recreational access, natural and scenic resource protection and support of small-scale, water-oriented businesses.

This plan also identifies lands within the study area that should be conserved for their natural resource value including the steep slopes on the west side of Diversity Hill, the stream corridor and wetland complex and the rare sand plains natural community. Colchester could use

Continued on page 34.

Use	IND	COM	GD-1	MU	WF	RP	Comments
1.111 Single-family dwelling			✓	✓		✓	Additional single-family homes should not be encouraged within the mixed-use or waterfront areas. Limited, low-density residential development may be appropriate within some parts of the resource protection district with conditions to protect fragile or critical resources.
1.112 Mobile home			✓			✓	
1.113 Detached dwelling w/ on-site commercial use		✓	✓				Lower-density, detached residential development within these districts is not compatible with the vision for the West Lakeshore Drive area.
1.121 Multiple dwelling per lot			✓				
1.122 Mobile home park			✓				
1.210 Duplex			✓				
1.220 Primary residence w/ accessory apt.			✓	✓	✓	✓	Must be allowed to the same extent as single-family residences. Within the mixed-use and waterfront areas, only within pre-existing homes.
1.310 Multi-family residence			✓	✓			Higher density housing, especially within mixed-use buildings, should be encouraged to create a viable "downtown" economy and culture.
1.410 Residential care home			✓				Uses are more appropriate within areas where single-use residential development is allowed.
1.440 Halfway house		✓					
1.450 Congregate housing		✓	✓				
1.510 Boarding house			✓				
1.520 Bed & breakfast			✓	✓			Development of a variety of lodging types should be encouraged to attract visitors and support tourism-dependent businesses. The scale of these uses should be controlled to maintain a balance between West Lakeshore Drive as a tourist destination and as a community-serving village center.
1.530 Hotel & motel		✓		✓			
1.540 Extended stay hotel		✓		✓			
1.560 Campground		✓	✓			✓	Primitive campgrounds may be appropriate within some resource protection areas with conditions to protect fragile or critical resources.
1.600 Temporary emergency residences	✓	✓	✓	✓	✓	✓	Generally allowed in most districts in town.
1.710 Home occupation			✓	✓	✓	✓	Must be allowed to the same extent as single-family residences. Within the mixed-use and waterfront areas, only within pre-existing homes.

31. Uses Allowed and Prohibited within the West Lakeshore Drive Area

Note: Check marks indicate a use that is or is proposed to be allowed (either permitted or conditional) within the area. Existing districts in the area include: IND - Industrial, COM - Commercial, and GD-1 - General Development One. Proposed land use areas include MU - Mixed Use, WF - Waterfront, and RP - Resource Protection. See Figure 30 (page 25) for general locations recommended for these land use areas.

Use	IND	COM	GD-1	MU	WF	RP	Comments
1.720 Home-based business			✓	✓	✓		Allow within pre-existing homes to support expansion of business uses. Within the waterfront area only if marine, tourism or recreation-based.
1.800 Planned residential development			✓			✓	Clustered development within the resource protection areas should be used as a technique to allow residential development while protecting fragile or critical resources.
2.111 Convenience store with gasoline sales	✓	✓					There is already a gas station at each end of West Lakeshore Drive. If further stations were to be allowed consider regulating distance between them.
2.112 Convenience store w/o gasoline sales		✓	✓	✓			
2.120 Shopping center		✓	✓	✓			Use design standards to prevent conventional strip mall or shopping center layout. Goal to create a "downtown" with buildings oriented towards the street, placed at or near the front lot line and parking in the rear or to the side.
2.131 Retail sales <10,000 sf w/o drive-up		✓	✓	✓			
2.132 Retail sales <10,000 sf w/ drive-up		✓	✓				Prohibit auto-oriented uses to the greatest extent feasible to encourage pedestrian-friendly environment and reduce congestion.
2.133 Retail sales 10,000 - 50,000 sf w/o drive-up		✓					Large-scale commercial uses are not compatible with vision for West Lakeshore Drive area.
2.134 Retail sales 10,000 - 50,000 sf w/ drive-up		✓					
2.135 Retail sales 50,000+ sf w/o drive-up		✓					
2.136 Retail sales 50,000+ sf w/ drive-up		✓					
2.137 Retail sales of goods produced on premises		✓	✓	✓			Use design standards to prevent conventional strip mall or shopping center layout. Goal to create a "downtown" with buildings oriented towards the street, placed at or near the front lot line and parking in the rear or to the side.
2.141 Retail food sales <5,000 sf		✓	✓	✓			
2.142 Retail food sales 5,000+ sf & supermarkets		✓	✓				Large-scale commercial uses are not compatible with vision for West Lakeshore Drive area.
2.151 Wholesale establishment <10,000 sf	✓	✓	✓				Commercial uses should be linked to vision for West Lakeshore Drive area, which include small-scale community-serving and tourism-based businesses.
2.152 Wholesale establishment 10,000 - 50,000 sf	✓	✓					
2.153 Wholesale establishment >50,000 sf	✓	✓					
2.171 Small equipment sales w/ repair	✓	✓		✓	✓		Within waterfront area, consider limiting to marine-related equipment.
2.172 Large equipment sales w/ repair	✓	✓					Given the limited amount of land available for development or redevelopment within the West Lakeshore Drive area, low-density, land consumptive uses should be prohibited.
2.181 Commercial greenhouse w/o on-site sales		✓	✓				
2.182 Commercial greenhouse w/ on-site sales		✓	✓				

Use	IND	COM	GD-1	MU	WF	RP	Comments
2.190 Roadside produce stand			✓	✓	✓	✓	Small-scale use appropriate in most areas.
2.200 Mobile home sales & rental	✓	✓					Given the limited amount of land available for development or redevelopment within the West Lakeshore Drive area, low-density, land consumptive uses should be prohibited.
2.310 Marine sales w/o service & repair	✓	✓	✓	✓	✓		Marine-related businesses of all types should be encouraged both within the mixed-use and waterfront areas. The scale of such uses, however, should be carefully controlled. Large-scale, land consumptive uses should be prohibited. These uses may be most appropriate as accessory uses to a marina.
2.320 Marine sales w/ service & repair	✓	✓	✓	✓	✓		
2.410 Automobile sales w/o service & repair	✓	✓					Given the limited amount of land available for development or redevelopment within the West Lakeshore Drive area, low-density, land consumptive uses should be prohibited, along with auto-oriented uses that could discourage more pedestrian activity and increase highway congestion.
2.420 Automobile sales w/ service & repair	✓	✓					
2.510 Automobile accessory sales w/o installation	✓	✓	✓				
2.520 Automobile accessory sales w/ installation	✓	✓	✓				
2.610 General merchandise rental	✓	✓	✓	✓	✓		Within the waterfront district, rental businesses could be limited to those that are marine- or recreation-related. Businesses that would be an asset to the West Lakeshore Drive area include bike or boat rentals.
2.620 Equipment rental	✓	✓		✓	✓		
2.630 Automobile rental	✓	✓					Automobile-oriented uses are not compatible with vision for West Lakeshore Drive area.
3.110 General office	✓	✓	✓	✓			Small office and professional uses, especially community-serving businesses, should be allowed within mixed-use area.
3.120 Research facility or laboratory	✓	✓	✓	✓			
3.131 Medical office <10,000 sf		✓	✓	✓			
3.132 Medical office 10,000+ sf		✓	✓				Large-scale uses are not compatible with vision for West Lakeshore Drive area.
3.133 Medical office w/ clinic		✓	✓	✓			Small office and professional uses, especially community-serving businesses, should be allowed within mixed-use area. See comments related to towers (12.100 and 12.200).
3.210 Radio & television studio	✓	✓	✓	✓			
3.220 Financial institution	✓	✓	✓	✓			
3.231 Bank w/ drive-up window		✓	✓				Automobile-oriented uses are not compatible with vision for West Lakeshore Drive area. This should include drive-up and drive through windows of all types.
3.232 Bank w/o drive-up window		✓	✓	✓			Small business and professional uses, especially those that are community- or tourist-serving, should be allowed within mixed-use area.
3.240 Personal or business service		✓	✓	✓			

Use	IND	COM	GD-1	MU	WF	RP	Comments
3.250 Artist production studio	✓	✓	✓	✓			Use especially appropriate for this area to build tourism economy.
3.260 Funeral home		✓	✓				Funeral homes can be significant traffic generators and have large parking need. May be more appropriate in other parts of town.
3.270 Crematorium	✓						Appropriate for a more industrial area or in connection with a funeral home.
3.281 Dry cleaner & laundry walk-in or self-serve		✓	✓	✓	✓		Within waterfront area as an accessory use to a marina.
3.282 Dry cleaner & laundry not walk-in	✓	✓	✓				Business does not generate foot traffic and may increase truck traffic. More appropriate locations elsewhere in town.
3.291 Veterinary clinic		✓	✓	✓			Small-scale community-serving business.
3.292 Kennel	✓	✓					Potential for off-site impacts (noise, odors, etc.) and more appropriate for lower-density areas with larger lots.
3.293 Animal grooming facility		✓	✓	✓			Small-scale community-serving business.
3.294 Animal shelter		✓					Potential for off-site impacts (noise, odors, etc.) and more appropriate for lower-density areas with larger lots.
3.311 Auto service & repair w/o body work	✓	✓					Automobile-oriented uses are not compatible with vision for West Lakeshore Drive area. Additionally, run-off from car washes could transport pollutants to the lake. There is already a gas station at each end of West Lakeshore Drive Consider regulating distance between gasoline stations if they do remain an allowed use. Within waterfront district gas sales may be accessory use to a marina. There is an identified need for a gas station designed to meet the needs of those hauling boats on trailers. The existing stations are not designed for easy access to the pumps for vehicles of that length. This is something that may be able to be resolved with improved site design at one of the existing stations. Small repair garage may be able to fit in with design standards.
3.312 Auto service & repair w/ body work	✓	✓					
3.320 Auto body work	✓	✓					
3.330 Car wash	✓	✓					
3.341 Gas sales w/o service & repair	✓	✓					
3.342 Gas sales w/ service & repair	✓	✓					
4.110 Printing & binding production facilities	✓	✓		✓			Provide opportunities for industrial uses to the extent that their footprint and impacts are compatible with vision for the West Lakeshore Drive area.
4.120 Photocopying & printing shop		✓	✓	✓			Small-scale community-serving business. Within waterfront area would be allowed as part of a marina.
4.131 Small equipment repair	✓	✓		✓			
4.132 Large equipment repair	✓	✓					Large-scale and land consumptive uses are not compatible with vision for West Lakeshore Drive area.

Use	IND	COM	GD-1	MU	WF	RP	Comments
4.140 Manufacturing & processing w/ distribution & warehousing	✓			✓			Provide opportunities for industrial uses to the extent that their footprint and impacts are compatible with vision for the West Lakeshore Drive area.
4.210 Lumber & contractor's yard	✓	✓					Given the limited amount of land available for development or redevelopment within the West Lakeshore Drive area, low-density, land consumptive uses should be prohibited. Salvage yards have the potential for pollutant run-off to the lake. Number of jobs per acre these types of uses support is low.
4.210 Salvage yard	✓						
5.110 Elementary & secondary schools			✓				These uses are generally more land consumptive than would be appropriate for the West Lakeshore Drive area.
5.120 Trade or vocational schools	✓	✓	✓				
5.130 Colleges & universities		✓	✓				
5.200 Religious use		✓	✓	✓			Use could be appropriate at a small-scale.
5.300 Orphanage			✓				More appropriate locations for such use elsewhere in town.
5.410 Cultural facility <500 sf		✓	✓	✓	✓	✓	These uses support the entertainment, recreation and tourism goals of this plan. Within the waterfront area, the use should have a water-based component or be designed to take advantage of water views and/or access. Within the resource protection area, these uses should not impact fragile or sensitive resources and should promote opportunities for outdoor recreation.
5.420 Cultural facility 500+ sf		✓	✓	✓	✓	✓	
5.500 Social club		✓	✓	✓	✓	✓	
6.110 Athletic facility	✓	✓	✓	✓	✓	✓	
6.121 Movie theater <300 seats		✓	✓	✓			These uses support the entertainment, recreation and tourism goals of this plan and their scale could be constrained by the dimensional and design standards of the district.
6.122 Movie theater 300+ seats		✓	✓	✓			
6.131 Theater or music hall <300 seats		✓	✓	✓			
6.132 Theater or music hall 300+ seats		✓		✓			
6.140 Adult entertainment		✓					This use is not appropriate given the vision for the West Lakeshore Drive area.
6.210 Private recreation facility		✓	✓	✓	✓	✓	These uses support the entertainment, recreation and tourism goals of this plan.
6.220 Public outdoor recreation	✓	✓	✓	✓	✓	✓	
6.230 Equestrian stable or arena			✓				These uses are more appropriate for lower-density districts with larger lots.
6.240 Race track (motorized vehicles)	✓						
6.250 Open air markets		✓	✓	✓	✓	✓	This use supports the community-serving and tourism goals of this plan

Use	IND	COM	GD-1	MU	WF	RP	Comments
6.260 Drive-in movie theaters		✓	✓				Automobile-oriented uses are not compatible with vision for West Lakeshore Drive area.
6.271 Marinas & yacht clubs		✓	✓	✓	✓	✓	Marine-related businesses of all types should be encouraged both within the mixed-use and waterfront area. There may be some areas within the resource protection area that are appropriate for boat storage. There could be potential to relocate some of the boat storage currently occurring within the waterfront and mixed-use areas to a less conspicuous location.
6.272 Residential marine associations		✓	✓	✓	✓	✓	
6.300 Coliseums & stadiums	✓	✓					Large-scale and land consumptive uses are not compatible with vision for West Lakeshore Drive area.
7.100 Hospital		✓	✓				
7.200 Nursing care home			✓				
7.300 Nursing care institution		✓	✓				
7.400 Mental health facility		✓	✓				
7.500 Correctional facilities	✓						
7.600 Home-based day care facilities			✓	✓	✓	✓	Day care uses should be supported, especially in association with major employers. Home-based day care facilities are allowed as home businesses in all single-family residences.
7.700 Intermediate day care facilities	✓	✓	✓	✓			
7.800 Large day care facilities	✓	✓	✓	✓			
8.111 Standard restaurant w/ outdoor seating		✓	✓	✓	✓		Dining uses support the vision for West Lakeshore Drive area, which includes adding small-scale community- and visitor-serving businesses. Within the waterfront district, restaurants should be designed to take advantage of water access and/or views. A restaurant with outdoor seating overlooking the water and/or with short-term docking for patrons was identified during the planning process as highly desirable in the West Lakeshore Drive area. A restaurant could also be an appropriate accessory use to a marina.
8.112 Standard restaurant w/o outdoor seating		✓	✓	✓	✓		
8.121 Short-order restaurant w/o drive-up	✓	✓	✓	✓	✓		
8.122 Short-order restaurant w/ outdoor seating	✓	✓	✓	✓	✓		
8.123 Short-order restaurant w/ drive-up		✓					Automobile-oriented uses are not compatible with vision for West Lakeshore Drive area. This should include drive-up and drive through windows of all types.
8.200 Bars		✓	✓	✓	✓		Provide opportunities for entertainment uses to the extent that their scale and impacts are compatible with vision for the West Lakeshore Drive area. Within the waterfront district, bars should be designed to take advantage of water access and/or views. A bar could also be an appropriate accessory use to a marina.
8.300 Night clubs		✓		✓			
8.400 Seasonal mobile food unit	✓	✓	✓	✓	✓	✓	Limited impact use that supports the vision for the West Lakeshore Drive area.

Use	IND	COM	GD-1	MU	WF	RP	Comments
9.100 Parking garages & lots	✓	✓	✓	✓			Design standards should be used to ensure that parking does not diminish the "downtown" character within the mixed-use area. Shared parking should be promoted to the greatest extent feasible.
9.210 Warehousing w/ enclosed storage	✓	✓					Given the limited amount of land available for development or redevelopment within the West Lakeshore Drive area, low-density, land consumptive uses should be prohibited. Distribution facilities have the potential for truck traffic impacts. Number of jobs per acre these types of uses support is low.
9.220 Mini-storage w/ enclosed storage	✓	✓					
9.230 Archival facility	✓	✓					
9.240 Distribution facility	✓	✓					
9.250 Auto, marine, equipment storage, not enclosed	✓	✓		✓	✓	✓	Marine-relate storage should be allowed within the West Lakeshore Drive Area, although storage should not be permitted that would diminish the potential to create "downtown" character in the mixed-use area. Less conspicuous, alternative locations for boat storage should be explored.
10.110 Agricultural operations w/o livestock			✓			✓	Natural-resource based uses may be appropriate for some areas within the resource protection area. Best management or accepted agricultural practices should be minimal requirements to prevent non-point source pollution from entering the lake.
10.120 Agricultural operations w/ livestock			✓			✓	
10.200 Silvicultural operations	✓	✓	✓			✓	
10.300 Mining operations	✓	✓					These uses are generally more land consumptive than would be appropriate for the West Lakeshore Drive area.
10.400 Reclamation operations	✓						
10.500 Firewood operations	✓						
11.100 Cemetery		✓	✓				
11.210 Sanitary landfill	✓						
11.220 Transfer station	✓						
11.310 Train station	✓	✓	✓				
11.320 Train yard	✓						
11.330 Bus station	✓	✓	✓	✓			Small-scale bus or transit stop would be an asset to the West Lakeshore Drive area and provide an alternative to travel by personal passenger vehicle. A large station that would include significant parking, bus storage and/or repair would not be appropriate within the West Lakeshore Drive area.

Use	IND	COM	GD-1	MU	WF	RP	Comments
11.340 Water transportation facilities				✓	✓		Water-based transportation uses, such as water taxis, sight-seeing boats or ferries, could also be an asset to the West Lakeshore Drive area and provide an alternative mode of travel, especially for visitors. These types of uses are currently not specifically authorized in Colchester's zoning regulations. Potential for connections with the Burlington waterfront.
11.410 Public garage, local	✓	✓	✓				These uses are generally more land consumptive than would be appropriate for the West Lakeshore Drive area. Also storage of road sand & salt is a pollution hazard.
11.420 Public garage, state	✓	✓					
11.510 Town hall		✓	✓				Community gathering spaces further the vision for the West Lakeshore Drive area.
11.520 Community center		✓	✓	✓			
11.530 Police station	✓	✓	✓				These public uses are less well-suited to the West Lakeshore Drive area due to their traffic impacts or land consumption. If the area does redevelop at significantly greater densities and adds residential units, the need for public safety facilities or a post office may need to be re-examined.
11.540 Fire station	✓	✓	✓				
11.550 Rescue squad & ambulance services	✓	✓	✓				
11.600 National guard center	✓	✓	✓				
11.700 Civil defense operations	✓		✓				
11.800 Post office	✓	✓	✓				
11.910 Essential service, neighborhood	✓	✓	✓	✓	✓	✓	Uses generally allowed within most districts.
11.920 Essential service, community or regional	✓	✓	✓	✓	✓	✓	
12.100 Tower <50 ft tall	✓	✓	✓	✓		✓	Moderately sized towers should be allowed when needed, but waterfront locations are not appropriate. Efforts should be made to utilize existing structure whenever possible, such as the existing water tower. Green development should be encouraged and the possibility of incorporating wind turbines into a project should not be automatically dismissed. As wind turbine technology matures, the negative impacts (noise, visibility, size, etc.) are being reduced. Utility-scale generation projects, based on current technology, should be prohibited although with future technological innovations there may be energy generation systems appropriate for this area.
12.200 Tower 50+ ft tall	✓	✓	✓				
12.300 Wind turbine	✓	✓		✓	✓	✓	
13.000 Temporary structure	✓	✓	✓	✓	✓	✓	Use generally allowed within most districts.
14.000 Planned unit development	✓	✓	✓	✓	✓	✓	Planned unit development should be encouraged for all major projects within the West Lakeshore Drive area.

an overlay to designate those areas for protections such as low development density, limited allowed uses, required clustering and/or a conditional use or site plan review.

Figure 30 (page 25) illustrates the concept of these three areas within the West Lakeshore Drive area although the boundaries shown are approximate. If this concept were to be implemented in the town's zoning regulations, the exact positioning of any new or modified zoning district or overlay boundaries would need to be determined by the Planning Commission after landowner and public input.

The land use concept also shows expansion of the town's existing General Development One district. Consideration should be given to where the line should be drawn between the mixed-use area and the general development district. While the allowed uses are envisioned to be quite similar, the current general development district does not have dimensional and design standards that would necessarily result in "village-style" development. The general development district also allows for a wider range of residential uses than is recommended within the mixed-use area.

Within the study area, the town's current zoning districts largely reflect the realities of what exists now. The land use concept presented here suggests a way to accommodate what is currently built, while steering new development towards a different pattern with the intent of changing the look and feel of West Lakeshore Drive slowly over time.

Hazelett Strip Casting

The Hazelett property poses unique opportunities and challenges to achieving the vision described in this plan. It is a large piece of land with significant additional development potential. The company provides quality jobs and has been a cornerstone of Colchester's economy for many years. Its owners have expressed that no significant changes to their operation or how they use their property on West Lakeshore Drive are planned for the foreseeable future. The town sees no conflict between the continued operation or expansion of the business and the vision for the future of the area.

When the time comes, however, for the town to make decisions about the future zoning of land within the study area, the question of whether it is appropriate to zone the entire Hazelett property solely for industrial use will need to be considered. This plan recommends that the town consider allowing for compatible industrial activities within a mixed-use area, which will allow the existing business to continue and grow, while limiting opportunity for development of many of the uses currently allowed within the Industrial district. This would also provide for a wider variety of development opportunities for the portions of the property not actively used in association with the existing business if so desired by the owner in the future.

Continued on page 37.

Standard	IND	COM	GD-1	MU		WF		RP		Comments
				Min	Max	Min	Max	Min	Max	
Lots										
Density (units/sq ft)	**n/a**	**n/a**	**1/10,000**	1/40,000	1/2,500	n/a	1/10,000	n/a	1/10 acres	In the mixed-use area, the goal is to require higher density development in order to shift from the strip highway commercial pattern.
Lot Size (sq ft)	**40,000**	**20,000**	**10,000**	2,500	n/a	10,000	n/a	20,000	n/a	Allowing for very small lots within the mixed-use area allows for a greater variety of site design options and building types. A range of lot sizes is common in a downtown setting.

32. Dimensional Standards within the West Lakeshore Drive Area

Note: Existing districts in the area include: IND - Industrial, COM - Commercial, and GD-1 - General Development One. Proposed land use areas include MU - Mixed Use, WF - Waterfront, and RP - Resource Protection. See Figure 30 (page 25) for general locations recommended for these land use areas.

Standard	IND	COM	GD-1	MU		WF		RP		Comments
				Min	Max	Min	Max	Min	Max	
Lot Width/Frontage (ft)	150	100	100	25	100	100	n/a	200	n/a	In the mixed-use area, the goal is to require narrow frontages as is customary in downtowns. This also ensures that parking will be limited to a row or two along the sides of a building and will largely be located behind buildings. Narrow widths will ensure buildings are located close together in a regular pattern promoting walking from one destination to another rather than driving.
Lot Depth (ft)	n/a	n/a	n/a	100	n/a	100	n/a	100	n/a	With width is more tightly controlled, lot depth can be varied to achieve a wide range of lot sizes.
Lot Coverage	80%	70%	60%	n/a	75%	n/a	50%	n/a	10%	In mixed-use areas, lot coverage is a more important factor in controlling density than lot size. 80% coverage is on the low end for a downtown setting due to the stormwater issues of this waterfront area. Lot coverage could be increased by bonuses linked to innovative stormwater management and/or allowing public access.
Principal Buildings										
Front Setback (ft)	45	45	30	0	15	0	30	20	n/a	In the mixed-use area, the goal is to bring buildings up to or close to the front lot line as is customary in downtowns.
Side Setback (ft)	20	15	10	0	50*	10	n/a	25	n/a	*Combined. In the mixed-use area, this allows for zero-lot line structures as is customary in downtowns. It is not desirable in a downtown setting to have wide open spaces between buildings as they discourage walking between destinations.
Rear Setback (ft)	25	30	30	10	n/a	30	n/a	30	n/a	In the waterfront area, the rear setback is the setback from the shoreline and therefore should be deeper. There could be flexibility through a waiver process for uses that are water-dependent or amenities like waterfront dining areas.

Standard	IND	COM	GD-1	MU		WF		RP		Comments
				Min	Max	Min	Max	Min	Max	
Height	40 ft	35 ft	30 ft	2 stories	4 stories*	n/a	2 stories	n/a	2 stories	*3rd and/or 4th stories could be linked to a density bonus (for mixed use, affordable housing, shared or public parking, innovative stormwater management, public access, green design, etc.) or transfer of development rights. Requiring two story buildings is an essential component of changing the development pattern from highway commercial to village downtown.
Footprint (sq ft)	n/a	n/a	n/a	n/a	10,000	n/a	5,000	n/a	5,000	In the mixed-use area, the goal is to prevent large buildings that would overwhelm the envisioned pedestrian scale. An exemption could be provided for some uses such as industrial buildings that meet specific criteria. A waiver process could be used to allow for larger structures if design standards are met. Larger building footprints could be linked to a density bonus or transfer of development rights.
Accessory Buildings										
Front Setback	45	45	30	20*	n/a	10*	n/a	20*	n/a	*Behind principal building front line. This ensures that the principal building is the most prominent on the lot.
Side Setback	15	15	10	10	n/a	10	n/a	10	n/a	
Rear Setback	15	30	30	10	n/a	30	n/a	10	n/a	
Height	40 ft	35 ft	30 ft	n/a	2 stories	n/a	2 stories	n/a	2 stories	
Footprint (sq ft)	n/a	n/a	n/a	n/a	2,500	n/a	1,000	n/a	1,000	

Bayside Property

The town-owned Bayside parcel also is unique in the opportunities and challenges it offers. The voters approved the purchase of the 14 acres in 2004.

Comments heard during the process of preparing this plan indicate that some residents voted for the purchase with a perception that the property would become the site of a community center. From the discussion, it is evident that citizens have widely varying interpretations of the term "community center." Some were envisioning developing the property into the core of the small "downtown" on the bay. Others thought that it would be the location of a community building or recreational facilities. Others hope it will remain open land and be incorporated into Bayside Park.

This conceptual development plan suggests that multiple uses could occur on the property. A portion could be kept open to expand Bayside Park, while another area could be developed for other uses. The suitability of the site for wastewater treatment should be explored as it is municipally owned and the general soils map indicates the presence of soils well-suited for on-site septic disposal. Obviously further public discussion will be needed to determine how residents want to use this land.

Dimensional Standards

To redevelop a highway commercial strip into a downtown district, the dimensional standards within the designated mixed-use areas need to be revised. This report recommends a form-based approach, which includes both required minimums and maximums for various dimensional standards, as well as a maximum footprint for new buildings. Figure 32 (beginning on page 34) outlines how dimensional standards could be used in the West Lakeshore Drive area to guide site and building design. If this concept were to be implemented in the town's zoning regulations, the Planning Commission would need to establish the standards after landowner and public input. While the dimension standards for mixed-use areas presented in Figure 32 are typical of downtown settings, they will need to be calibrated to reflect local conditions and concerns.

The question arises as to whether it is appropriate to zone for a higher density of development within the mixed-use area despite the current lack of infrastructure to support it. One of the reasons for doing so is that the potential for redevelopment at a higher density may spur private development of the required infrastructure. As projects in other areas of town has shown, public-private partnerships are critical to the funding of infrastructure improvements. The suggested dimensional standards also limit further development that would enforce the highway commercial pattern that currently exists.

The regulations could be written to allow flexibility within the dimensional standards to address the potential need for on-site septic and/or stormwater treatment. However, as stated elsewhere in this report, the desired development pattern along West Lakeshore Drive is dependent on providing an alternative to on-site wastewater treatment, and potentially stormwater management as well.

Design Standards

The final regulatory element needed to implement the recommendations of this plan is design standards, which will guide site and building design in accordance with the desired character of the area. Such standards are most critical for the mixed-use area, where the desired character - a village-scale downtown - has specific physical characteristics that include the following:

- A mix of uses in close proximity to each other bringing people together for a variety of activities –including work, living, recreation, business, shopping, and entertainment – attracting and benefiting people of all ages and income levels.
- Features, facilities and uses that will attract visitors.
- A physical layout with higher densities in comparison to outlying areas and a distinct, defined geographical edge that establishes an identity or a sense of place.
- A pedestrian-friendly environment with a transportation system that is designed first for pedestrians and secondarily for vehicles.
- A strong public presence, including greens, parks, municipal and educational facilities, trails or other public spaces or buildings.
- A presence of special features (such as view of or access to Malletts Bay).
- Multi-story buildings that maximize the use of vertical space while maintaining a human scale at street level.
- Buildings located close to the street built at the street line or with very shallow setbacks.
- Principal buildings closer to the street than associated accessory buildings (such as garages).
- Narrow, interconnected, tree-lined streets.
- Short and/or irregularly shaped blocks.
- Buildings whose main entrance is oriented to the street.

- Limited amounts of land devoted to parking, especially as visible from the street.
- On-street parking.
- Diversity in the size of buildings and lots.

Design standards can be written into the town's zoning regulations, incorporated into design guidelines that are not mandatory like the zoning regulations, or a combination of both approaches. Illustrations of the desired development pattern can also help clarify the desired result for all those involved in the land development and review process.

Figure 33 presents suggested standards that could be used within the mixed-use area. These standards would need to be adjusted by the Planning Commission to fit within Colchester's existing regulations. While the details may need further refining, the underlying principles are appropriate to promote development that is in keeping with the vision for the West Lakeshore Drive area.

Performance standards, especially those specific to marinas, could also be developed for the waterfront area. Stormwater management, access (both vehicular and pedestrian) and parking are critical issues on these sites. The Maine Department of Environmental Protection has published "Brightwork - A Best Management Practices Manual for Maine's Boatyards and Marinas" that includes guidance that might be appropriate for Colchester's waterfront uses including:

- Good housekeeping, planning and management of boatyard and marina stormwater can reap huge environmental, safety and financial benefits. Thoughtful planning about drainage, shoreline

33. Design Standards for the Mixed-Use Area (right)

(1) **Mixed Use.** No building shall have more than 60% of its floor area devoted to non-transient residential uses. All non-lodging commercial buildings shall include at least 1 dwelling unit.

(2) **Architectural Guidelines.** To achieve the purposes of this district – redevelopment of a highway commercial district to a compact, mixed-use center – applicants are strongly encouraged to consider the following design standards. The DRB shall use these standards to determine whether proposed projects are appropriate in character and further the purposes of this district.

(a) Main building entrances should face the street and should be easily identifiable and scaled to the size of the street they front. In commercial and mixed-use buildings, doors and entryways should be modeled on traditional storefront design, be recessed and be compatible with the architectural style of the building.

(b) Commercial and mixed-use buildings should be designed with display windows and signage facing the street they front.

(c) The front elevation of commercial and mixed-use buildings should provide a minimum of 60% and a maximum of 85% transparency at ground level. Such buildings should include large front windows on the ground level, with sills between 12 to 18 inches above sidewalk level and lintels 9 to 12 feet above sidewalk level. Clear glass should be used on ground-floor windows. The use of transom windows is encouraged.

(d) If shutters are used, appropriate hardware should be used and shutters shall be proportioned to cover one-half the width of the window.

(e) Buildings situated at corners should "wrap" the corner by continuing façade elements such as the cornice or other horizontal features on all street elevations.

(f) New facades should include base, middle and top levels and coordinate the relative height of these façade elements with those of any adjacent or nearby buildings.

(g) Roof forms may include a symmetrical pitched roof or a flat roof with a cornice. Flat roof and parapet construction is preferred for buildings fronting on West Lakeshore Drive; sloping roof structures should use dormers and gables to give the façade more visual character. Slopes of pitched roofs should be not less than 5:12, except that porch roofs may be sheds with pitches not less than 3:12. All gables should be parallel or perpendicular to the street. Sloping roofs shall ensure the fall of snow, ice or rain does not create a hazard for pedestrians. Rooftop runoff should be directed to pervious areas such as yards, open channels or vegetated areas.

(h) Recommended façade materials include common red brick (bare or painted), special masonry units (textured, colored, or painted), natural stone, or wood clapboard. Alternative materials that closely approximate natural or traditional materials may be considered. Beige, multi-tone, or imitation brick siding; bare masonry units; metal, asphalt or vinyl siding; and imitation stone or exterior insulation finish systems (E.I.F.S.) should be avoided.

(i) Recommended trim materials include finished grade, painted, or stained wood. Bare lumber grade wood or plywood should be avoided.

(j) Recommended window materials include anodized aluminum or vinyl clad frame (black, brown or approved color), or painted or stained wood.

(k) Recommended lintel and sill materials include brick, stone, wood or colored concrete. Bare aluminum frames should be avoided. Clear, frosted or stained glass is recommended; tinted or mirrored glass should be avoided.

(l) Recommended roof materials include black or single tone asphalt shingles, standing seam roof with small seam width and approved color or natural slate. Imitation slate and wood shingles that closely approximate the appearance of natural materials may be considered. Parapet caps may be stone, concrete or limestone.

(m) Canvas awnings may be used; plastic awnings should be avoided.

(n) Recommended hard surface materials include asphalt, patterned asphalt, brick, paving stone and patterned concrete. Asphalt use should be limited to parking and loading areas.

(o) Building signage should be simple and integrated into the design of the building.

(3) **Drives and Access.** The following shall apply to drives and access within this district:

(a) All lots with frontage on more than one road shall be accessed from the least traveled road. The DRB may waive this requirement upon finding that access from the more heavily traveled road is necessary to protect public safety.

(b) All lots in existence as of the effective date of these regulations with frontage only on West Lakeshore Drive shall be allowed not more than one access onto West Lakeshore Drive notwithstanding future subdivision. The DRB may waive this requirement upon finding that additional access is necessary to protect public access. No lot however, shall be allowed more than two access points onto any single road.

(c) Access and drives shall be shared and rear parking lots connected across lots whenever feasible. The DRB may require a right-of-way easement and/or construction of street stubs to allow for future access between adjoining lots.

(4) **Parking**. The following shall apply to parking within this district:

(a) Parking shall be prohibited between the front lot line and principal building frontline.

(b) On-site parking not located behind a building shall be visually screened from the street year-round through landscaping, fences, and/or walls.

(c) Lots entirely devoted to surface parking without a principal building shall not exceed a width of 60 feet for a depth of 50 feet as measured from the front lot line and shall provide a 15-foot deep green space along all portions of their frontage not part of an access drive, which may provide stormwater retention, treatment and/or infiltration in a manner that enhances the aesthetic character of the streetscape.

(d) The creation of greater than 50 percent more parking spaces than the minimum required under these regulations for the proposed use shall be prohibited.

stability, road and ditch maintenance, and building layout can dramatically reduce pollutant movement into the water.

- Minimize impervious areas. Doing so will reduce stormwater runoff.
- Avoid building structures that will impact water and sediment movement. Seawalls, causeways and filled piers have significant impacts on water movement and quality and sediment movement. It is in your best interest to have water moving through your facility constantly.
- Minimize the discharge of pollutants from materials used for dock, pier, or float construction and maintenance.
- Use upland and inland areas for parking and storage, protecting shorefront and making space available for buffer strips, swales, and other stormwater mitigation.
- Expand upward instead of adding slips, where allowable. Consider dry-stack storage, reducing the need for antifouling paint, and the risk for fuel spills on the water.
- Landscape your shorefront. Buffer strips and vegetated shoreline stabilization are beautiful and functional and can dramatically reduce pollutants running off the facility. Choose a variety of pest-resistant plants suited to the location, native to the area and provide fertilizer carefully at the roots at planting time to minimize fertilizer runoff.

The manual provides specific benchmarks for a range of stormwater management and pollution prevention topics such as repainting, engine repairs, refueling, pet waste management, solid waste management, and construction of

piers and docks. The full manual is available for download from the watershed materials section of Maine Department of Environmental Protection Bureau of Land and Water Quality website, http://maine.gov/dep/blwq, and can be ordered on CD.

Other site design elements are also important in the waterfront area such as lighting, landscaping and pedestrian amenities. Design guidelines could also be used to address those issues on the north side of West Lakeshore Drive.

Density

The envisioned development density of the West Lakeshore Drive area as described in this plan is not significantly greater than that which is allowed under the town's current zoning regulations. However, the existing development pattern within the study area is significantly less than the maximum density permitted under the regulations.

This plan does envision some redistribution of development density by increasing development potential on land abutting West Lakeshore Drive to the south and decreasing development potential on lands characterized by fragile or sensitive natural resources. The Shore Acres residential neighborhood would remain as currently zoned, so its allowed uses and densities would not be affected by this plan.

Within the proposed mixed-use area, the ultimate development potential would be dependent on the height of future buildings and how future building space is allocated between non-residential and residential uses.

The 77-acre mixed-use area, under the suggested dimensional standards of 75 percent lot coverage (buildings and parking) and building heights from two to four stories,

(e) All reasonable measures to reduce the parking footprint shall be implemented such as shared parking, on-street parking, under-building or structured parking, following minimum stall size and number of required space standards, making up to 30% of spaces sized for compact cars (8 ft by 16 ft), using an angled layout with one-way aisles, or using pervious surfaces for overflow parking.

(f) Surface parking lots shall use required islands and landscape areas to provide stormwater detention, treatment and infiltration on-site.

(5) **Pedestrian Access**. Pedestrian access shall:

(a) Be provided along the front line of all lots.

(b) Be not less than 6 feet wide.

(c) Be constructed of paving brick, concrete, concrete pavers, or concrete with brick paver borders where serving commercial uses or heavy foot-traffic is anticipated. Pervious surface walkways and paths should be considered wherever practical. Asphalt shall not be used.

(d) Create a linked pedestrian network connecting all uses.

(6) **Street Trees**. Street trees shall be planted along each side of all streets, public or private, existing or proposed in accordance with the following:

(a) Street trees shall be spaced at intervals no greater than 40 feet along both sides of all roads, excluding rear access lanes and alleys.

(b) Existing healthy and mature trees retained may be counted towards the street tree planting requirement.

(c) New street trees shall be native, deciduous shade trees with a caliper of 2.5 inches at a height of 12 inches and shall:

i) Cast moderate to dense shade in the summer.
ii) Have a typical life span of more than 60 years.
iii) Mature to a height of at least 50 feet.
iv) Be tolerant of pollution and direct or reflected heat.
v) Require little maintenance by being mechanically strong (not brittle) and insect and disease resistant.
vi) Be able to survive 2 years with no irrigation after establishment.

(d) When planted in front of storefronts or within the visibility triangle of an intersection, street trees shall consist of deciduous species that branch above 8 feet, or can be trimmed to that height without destroying their natural form.

(e) The DRB may modify street tree requirements solely to allow on-site stormwater retention, treatment and/or infiltration systems to be incorporated into the streetscape.

(7) **Outdoor Lighting**. All outdoor lighting shall be designed, located and used in accordance with the following:

(a) Full cut-off lighting fixtures are required for all outdoor walkway, parking lot, canopy and building/wall mounted lighting, and all lighting fixtures located within above-ground, open-sided parking structures.

(b) Use of freestanding lights in excess of 20 feet in height are discouraged, and such lights shall not be permitted to exceed the height of the principal structure on the site.

(c) Applicants are encouraged to use photo-sensitive cells, timers or other similar means to activate lights only when necessary. "Always on" lighting shall be prohibited except where specifically required to protect public safety. Building exteriors, signs and parking lots shall not be illuminated when not in use or open for business unless expressly permitted by the DRB. Use of motion detectors and similar types of security lighting is encouraged.

(d) Lighting shall not exceed 0.1 foot-candles at the property line. The DRB may waive or modify this requirement upon finding that greater light levels are necessary for security and public safety.

(e) Parking lot lighting shall not exceed an average of 1.5 foot-candles throughout, a maximum of 6 foot-candles and a maximum-to-minimum uniformity ratio of 20:1 foot-candles.

has a maximum potential of 1.3 to 1.5 million additional square feet of building space. While the same area under the current General Development One district standards of 60 percent lot coverage and buildings up to 3 stories, has a maximum potential of 800,000 to 1.1 million additional square feet of building space. The mixed-use area currently supports around 300,000 square feet of building space.

These development potential figures are based on the unrealistic assumption that the area would be fully built-out at its maximum potential. While this is unlikely to occur, the build-out numbers provide a sense of how the proposed dimensional standards would impact the amount of development that could occur.

Lands, which are currently developed at a lower density, would need to be redeveloped at much higher densities to approach those maximum build-out numbers - a process that would likely occur slowly over many decades. A significant amount of development potential is located on the Hazelett parcel, which is anticipated to remain as currently used for the foreseeable future.

Within the 30-acre waterfront area (town lands excluded), the current amount of building space is approximately 113,000 square feet. Under the suggested dimensional standards of 50 percent lot coverage and a maximum building height of two stories, there is the potential for an additional 115,000 square feet of building space. This compares to 167,000 to 216,000 square feet for the same area under the dimensional standards of the town's current General Development One or Commercial districts.

INFRASTRUCTURE NEEDS

Wastewater

As discussed previously, alternatives to on-site wastewater treatment will be necessary to achieve the development density and pattern recommended by this plan for the West Lakeshore Drive area. The failed bond vote in 1999 and the public discussions that followed suggested that Colchester residents did not support extending municipal sewer lines to Malletts Bay, largely over a concern that it would spur large-scale, resort-style waterfront development. The follow-up meeting held in 2007 confirmed that position has not changed significantly. Water quality remains a central concern of town residents as well.

Decentralized wastewater treatment systems could provide another option to support targeted higher-density development. As described elsewhere in the plan, several areas of soils well suited to wastewater treatment are located within the West Lakeshore Drive area. Such systems have reduced design flows under the Vermont wastewater rules, so efficiency can be gained with shared systems. Additionally as technology improves and Vermont accepts more innovative systems, a wider range of treatment options will likely become available over time.

While there is not the soil-based capacity to support the full build-out potential of the area as outlined above, it is important to remember that this a long-range plan. The redevelopment of the area is anticipated to occur over decades. So there could very well be sufficient soil-based capacity for one or more community systems to support new development and address any existing systems that might fail for a number of years into the future.

To accommodate 20 percent of the non-residential development potential (346,000 square feet of building space) within the study area would require 15,000 to 25,000 gallons per day of treatment capacity depending on the mix of uses proposed. Assuming that new residential development in the area would be attached units, 18,000 to 36,000 gallons per day of treatment capacity would be required to support 20 percent of potential new units (126 units). Residential uses have higher flows than most non-residential uses. The extent to which the upper floors of mixed-use buildings would be developed as offices rather than dwellings will greatly affect wastewater flows.

Under Vermont's 2005 Wastewater System and Potable Water Supply Rules, soil-based systems can treat up to 6,500 gallons per day before triggering the need for an Indirect Discharge Permit. A 6,500-gallon per day system could support as much as 125,000 square feet of retail space, 150,000 square feet of office space, 150 restaurant seats, 65 hotel rooms, 25 two-bedroom apartment or townhouse units, or 45 one-bedroom apartment or townhouse units.

Consideration should also be given to the timing of wastewater projects. If coordinated with roadway improvements, the cost of installing necessary pipes and infrastructure can be significantly reduced. Conversely, if roadway, sidewalk or path projects are completed before pipes are laid, the cost of installing the infrastructure can be much greater.

Stormwater

The amount of stormwater generated along West Lakeshore Drive is dependent upon the amount of impervious surface. The overall amount of impervious surface is already quite high along the roadway and waterfront as described elsewhere in this plan. If additional development occurs within the study area as envisioned in this plan, the amount of impervious surface would increase.

As development proceeds, areas for stormwater structures to treat and detain runoff, and allow it to infiltrate for groundwater recharge, will need to be constructed. Consideration should be given to integrating stormwater management into the area's natural systems and existing drainage patterns. Using open water features, marshes, and vegetated drainage swales can slow the flow of water, remove sediments, pollutants, and dissolved nutrients, and allow water to infiltrate into the soil. To meet both wetland and stormwater permitting requirements, detention and treatment of runoff must occur before the water reaches the bay. This may require that some of the green space within the study area be constructed wetlands or ponds, and that stormwater management techniques be incorporated into parking lots and streets.

As with wastewater, stormwater can be collected and piped to an off-site location. Such a decentralized stormwater system could allow for higher density development within designated areas. Along with an investigation of locations suitable for wastewater treatment, sites well suited for stormwater management should also be identified.

FUNDING SOURCES

Public-Private Partnerships

Realization of the vision for West Lakeshore Drive will be the result of a long-term working relationship between the town and private landowners. Private residential and commercial development will comprise most of the redevelopment, balanced by strategic public improvements. Without both parties' cooperation, the vision will not be achievable.

Redeveloping West Lakeshore Drive as envisioned in this plan will require considerable public and private investment. Early identification of public financing options and coordination with private developers so that costs can be shared will make necessary improvements more financially feasible.

Bonding Authority Tax Revenues

Municipalities can raise revenue for expensive infrastructure projects by issuing bonds. In Vermont, municipalities typically sell their bonds to the Vermont Municipal Bond Bank, a quasi-state agency. The bank bundles municipal bonds and resells them to individual or institutional investors. The bond transaction costs are assumed by the bank, which is an important advantage of this source of financing. Interest rates are determined at the date of sale and the payback period is typically 20 or 30 years with payments due monthly.

Municipalities have several property-tax based options available to raise revenue for paying back a bond. The municipal tax rate can be raised on all property to generate additional revenue to cover bond payments. A special assessment district can be created in which property owners who are benefiting from the investment pay a special tax to cover the cost of bond payments. A tax increment financing district can be established that dedicates any new tax revenues generated by increased property value resulting from the investment to paying off the bond.

Some Vermont municipalities also have the option of imposing an additional one percent sales, meals and/or rooms tax. Williston, South Burlington and Burlington all use local option taxes to fund infrastructure and other community development projects. A one-percent retail

sales tax in Colchester would raise more than 2.5 million in revenue annually given current sales receipts. The town was ranked fifth in total retail receipts in 2006 behind Burlington, Rutland, South Burlington and Williston. However, the state legislature authorized local option taxes in conjunction with passage of Act 60 for only those towns that met certain criteria. Unfortunately, Colchester is not one of the 76 towns that can qualify under that statute (cities have the authority through their charters). There was an unsuccessful attempt to expand local option taxing authority to all municipalities in 2007 by the Vermont Senate. The issue is likely to be brought up again in future legislative sessions.

Impact and User Fees

Impact fees are another funding source available for infrastructure projects. These fees are levied on new development to pay for the planned facilities or infrastructure needed to serve new growth. The fees need to be linked to an adopted capital budget and program. The amount of the fee must be based on impact of the new development, and the revenues can be used only for the facility or infrastructure projects directly impacted by it. Impact fees are fair in that those that generate the need for expensive improvements pay for them, but they increase development costs which can discourage some types of uses.

Colchester currently levies impact fees on new dwellings to fund acquisition of recreation lands, in addition to a per bedroom school impact fee for new homes, conversions and additions. The town has also established user fees for various services, programs and facilities. User fees generate revenue from those who directly benefit from a public service.

State and Federal Highway Funding

West Lakeshore Drive is part of the state highway system. Transportation projects associated with state highways can be funded through the Surface Transportation Program (STP). STP funds have the most flexible uses of any federal transportation funds. STP funds may be used for highway, transit, and non-motorized facility construction and improvements. Facilities must be classified by the state as eligible for federal aid, although sidewalk projects on local roads that are not on the federal aid system may also be eligible for STP funding.

The non-federal match for STP funding is 20 percent. For projects that are completely on the state system, the state typically covers the 20% match. When local road or bridges are involved, a local match of 10-20% may be required depending on the classification of the highways involved and other factors.

In Chittenden County, projects utilizing STP funds are typically prioritized by the Metropolitan Planning Organization (MPO) relative to other projects in the county and must pass through the VTrans scoping and project development process. The project development process may take several years and does not necessarily guarantee that funds will be waiting when the studies are completed. The Route 127 Corridor project is currently listed on the MPO's Transportation Improvement Plan (TIP), but has not been allocated any funding. Transporation-related grant programs are described below.

Grant Programs

Some of the public improvements called for in this plan, most notably transportation- and recreation-related projects may be eligible for funding through state or federal grant programs. Figure 34 details some of the major grant sources relevant to projects within the study area.

Land and Water Conservation Fund

Contact:	Vermont Agency of Natural Resources, Forest, Parks and Recreation Department (www.vtfpr.org) Pat Peterson, 802-241-3653, pat.peterson@state.vt.us
Application Date:	Annually, late winter.
Eligible Applicants:	Municipalities (includes towns, cities, regional park districts, school districts and state agencies).
Funding Amount:	No maximum grant request. Approximately $125,000 has been available statewide in recent years.
Match Requirement:	50%. Donation of land, and in-kind labor and materials can be used as match.
Eligible Activities:	Funds are available for the acquisition of lands and waters or for the development and enhancement of public outdoor recreation facilities that are consistent with the outdoor recreation goals and objectives highlighted in the Statewide Comprehensive Outdoor Recreation Plan (SCORP) and recreation elements of local plans. Because of reduced federal funding levels in recent years, acquisition projects are uncommon; redevelopment of existing facilities has become more the norm.
Comments:	This is a pass through of federal funding to the state. Municipalities must agree to dedicate the park or area where the project is located for public outdoor recreational use in perpetuity. LWCF regulations do not permit funding for projects on leased land of any kind. In addition, the grantee must also agree to develop, operate and maintain the development to acceptable National Park Service (NPS) standards for public outdoor recreation. Use of federal money for playground equipment requires meeting national safety standards, which are described in the "Handbook for Public Playground Safety" available from VTFPR.

VHCB Local Conservation Grant Program

Contact:	Vermont Housing and Conservation Board (www.vhcb.org) (802) 828-3250, info@vhcb.org
Application Date:	Open application period. Awards are made twice a year.
Eligible Applicants:	Municipalities and nonprofit organizations.
Funding Amount:	Maximum request $150,000.
Match Requirement:	33%. Match may include cash, in-kind services, and donations of land and easements.

VHCB Local Conservation Grant Program

Eligible Activities:	Funding may be used for acquisition costs and for associated projects costs such as appraisals, options, or closing costs. Projects funded under this program might include: land acquisition to provide access to water for swimming or boating, biking and hiking trails, greenways, or conservation or expansion of town parks, forests and natural areas or acquisition of important historic sites for public use. Funding is not available for the construction or rehabilitation of buildings or the construction of recreational facilities.
Comments:	VHCB also has a grant program to fund conservation projects of statewide significance (as determined by the VHCB using input from the Natural Heritage Program, Department of Forests, Parks and Recreation, the Division for Historic Preservation and others). These projects are not required to provide local matching funds and are not limited to $150,000. Conservation projects eligible for VHCB funding include acquisition of natural areas that provide habitat for rare or endangered species, acquisition of lands to provide public access to trails or water, greenways, or acquisition of important historic sites for public use. These applications are considered five times a year.

Community Development Program Implementation Grants

Contact:	Vermont Community Development Program (www.dhca.state.vt.us) Lisa Ryan, (802) 828-1256, lisa.ryan@state.vt.us
Application Date:	Series of deadlines on an annual cycle.
Eligible Applicants:	Municipalities and partnerships that include a lead municipality.
Funding Amount:	$50,000 (minimum) to $200,000 (maximum)
Match Requirement:	Varies based on activity category.
Eligible Activities:	Provides funding for economic development, housing, public facilities, and public services, in support of economic development or housing that will result in direct benefit to persons of low- and moderate-income. This includes the rehabilitation or acquisition of public facilities and the provision of elder or child care.
Comments:	Planning grants are also available for amounts between $3,000 to $30,000 with a 25% match requirement. Accessibility Modification grants are available for projects to make public buildings accessible on a first-come first-serve basis out of an annual set-aside ($200,000)

Municipal Planning Grants

Contact:	Vermont Department of Housing and Community Affairs (www.dhca.state.vt.us) Wendy Tudor, (802) 828-5249, wendy.tudor@state.vt.us
Application Date:	Annually, fall.
Eligible Applicants:	Municipalities with current, regionally-approved town plans.
Funding Amount:	Maximum request $15,000.
Match Requirement:	None.
Eligible Activities:	Beyond the usual town planning and zoning related project, the program can be used to fund acquisition of development rights, easements and properties for housing and conservation purposes.

Building Communities Grants - Recreation and Education Facilities

Contact:	Vermont Department of Buildings & General Services (www.bgs.state.vt.us) Diane Nealy, (802) 828-3519, diane.nealy@state.vt.us
Application Date:	Annually, fall.
Eligible Applicants:	Municipalities and non-profit organizations that provide services to youth or adults in either an individual community or recognized community service area.
Funding Amount:	Maximum request $25,000. Approximately $200,000 has been available statewide in recent years.
Match Requirement:	75% cash match required. In-kind labor or materials are not eligible.
Eligible Activities:	The goal of the program is to provide competitive grants to municipalities and non-profit organizations to stimulate the creation and development of recreational and educational opportunities in Vermont communities. A facility-based project that provides or coordinates or organizes recreation programs for youth or adults within a community is eligible for funding.
Comments:	Funds are allocated through the state's Capital Bill on an annual basis. Project must be ready to construct or under construction. Concepts or ideas will not be funded. Grants will not be awarded as "seed" money. Preference will be given to projects that serve youth and/or elderly populations.

Building Communities Grants - Cultural Facilities

Contact:	The Vermont Arts Council (www.vermontartscouncil.org) Chris Hadsel, (802) 863-4938, chris.hadsel@gmail.com
Application Date:	Annually, fall.
Eligible Applicants:	Municipalities and nonprofit organizations.
Funding Amount:	Maximum request $20,000.
Match Requirement:	50%. The match must be 75% cash.
Eligible Activities:	The purpose of this grant program is to enhance, create or expand the capacity of an existing building to provide cultural activities for the public.
Comments:	Work undertaken on historic buildings must meet the Secretary of the Interior's Standards for Historic Preservation Projects. Eligible activities include new ramps or stairways, code improvement or utility systems work.

Transportation Enhancement Grants

Contact:	Vermont Agency of Transportation (www.aot.state.vt.us) Curtis Johnson, (802) 828-0583, curtis.johnson@state.vt.us
Application Date:	Annually, later summer.
Eligible Applicants:	Municipalities, state agencies, not-for-profit organizations, and federal agencies.
Funding Amount:	$10,000 (minimum) to $300,000 (maximum). Approximately $3 million has been available statewide in recent years.
Match Requirement:	20% total. Half of the required match must be cash; the remaining portion may be in-kind labor or materials.
Eligible Activities:	There are twelve categories of projects funded under the program including: Provision of Facilities for Pedestrians and Bicycles; Provision of Safety and Educational Activities for Pedestrians and Bicyclists; Acquisition of Scenic Easements and Scenic or Historic Sites; Scenic or Historic Highway Programs (including the provision of Tourist and Welcome Center facilities); Landscaping and Other Scenic Beautification; Historic Preservation; Archaeological Planning and Research; Environmental Mitigation of Highway Runoff and Vehicle-caused Wildlife Mortality. Within each category, funds can be used for planning, feasibility studies, preliminary engineering, property acquisition, staff time, and construction. Within the Provision of Safety and Educational Activities for Pedestrians and Bicyclists category funds can also be used for educational and promotional activities.
Comments:	To be eligible for funding, applicants must submit a letter of intent and attend mandatory training workshop. This program is best suited for larger projects and is not recommended for projects with budgets of less than $30,000.

Recreation Trails Program Grants

Contact:	Vermont Agency of Natural Resources, Forest, Parks and Recreation Department (www.vtfpr.org) Sherry Smecker Winnie, 802-241-3690, sherry.winnie@state.vt.us
Application Date:	Annually, mid-winter.
Eligible Applicants:	Municipalities and non-profit organizations.
Funding Amount:	Grant awards are limited to $20,000. Approximately $450,000 has been available statewide for competitive grants in recent years. Program also includes mini-grants of up to $500.
Match Requirement:	20%. In-kind labor and materials can be used as match.
Eligible Activities:	Construction, re-construction of trails; Development and rehabilitation of trailside amenities and trailhead facilities; Maintenance and restoration of existing trails; Bank stabilization, revegetation, and erosion control; Construction of small bridges, railings, ramps, and retaining structures; Operation of educational programs to promote safety and responsible use, environmental protection related to trail use; Trail assessment for accessibility and sustainability and Universal Trail Assessment Process for trail design and implementation; Acquisition of easements and fee simple title to property for recreation trails or trail corridors. Mini-grants can be used for : Construction of trailhead shelters, signs and kiosks; Purchase and installation of trail markers; Purchase of hand tools and small equipment for trail maintenance; Purchase or construction and installation of trailside amenities; National Trails Day celebration activities; Professional training for trail crews about recreation trail maintenance.
Comments:	This is a pass through of federal funding to the state. Applicants are encouraged to consider use of youth conservation crews or student service corps. Written permission for trails crossing private land is required in order to be eligible for funding. The program primarily supports development of unpaved walking or hiking trails.

Safe Routes to Schools Grant Program

Contact:	Vermont Agency of Transportation (www.aot.state.vt.us) Jon Kaplan, (802) 828-0059, jon.kaplanl@state.vt.us
Application Date:	Annually, late winter.
Eligible Applicants:	The SRTS program is intended for students in grades K-8. Both public and private schools are eligible to apply, and schools that include other grades (e.g. a 7-12 school) are eligible provided the focus is on the students in the eligible grades. School districts or groups of schools may apply as one entity, provided that the SRTS initiatives will be available in all schools within the group. Based on the federal guidelines for this program, state, local and regional levels of schools, and local government and nonprofit organizations, are also eligible recipients of SRTS funding. To encourage creative approaches to implementing this program, schools may choose to develop partnerships with other schools or regional/statewide non-profit organizations. Non-profit organizations that represent a school or group of schools are also eligible to apply.
Funding Amount:	$10,000 per school.

Safe Routes to Schools Grant Program

Match Requirement:	None.
Eligible Activities:	The program has a Phase 1 and Phase 2. Under Phase 1 eligible activities include public awareness campaigns and outreach to press and community leaders; traffic education and enforcement in the vicinity of schools; student sessions on bicycle and pedestrian safety, health and environment; training, volunteers and managers of SRTS programs. Once a school has participated in Phase 1, they will be eligible to apply for Phase 2 funding that could be used for actual infrastructure changes such as building sidewalks or paths, improving crossings and installing signs and pavement markings.
Comments:	Applicant schools agree to: develop a school travel plan; conduct before and after surveys of students and parents; identify a ped/bike safety educator; conduct two events/ year. Preference will be given to applications that include schools that have not previously received funding through the program.

Trees For Local Communities Cost-Share Grant Program

Contact:	Vermont Agency of Natural Resources, Forest, Parks and Recreation Department, Urban and Community Forestry Program (www.vtfpr.org) Danielle Fitzko, (802) 241-3673, daniellle.fitzko@state.vt.us
Application Date:	Annually, late winter.
Eligible Applicants:	Municipalities, community tree boards, local volunteer organizations, educational institutions, civic groups and approved nonprofit organizations.
Funding Amount:	Maximum request $4,000 ($200 for mini-grants). Approximately $30,000 has been available statewide in recent years.
Match Requirement:	50% (no match requirement for mini-grants). In-kind labor and materials can be used as match.
Eligible Activities:	Program has five grant types. Planning grants can be used for urban forestry master plans, shade tree inventories, streetscape designs, forest resource planning, or management plans for town forests. They encourage all first time grant applicants to begin with a planning grant. Education grants can be used to develop educational programs or materials, provide information or training, or promote public awareness of urban forestry. Planting grants are for communities with on-going urban and community forestry programs and a site-specific planting plan, or those who are attempting to follow-up on a previous planning grant are eligible. Funds can be used for the purchase and planting of trees. All trees will require a three-year maintenance guarantee on survival. Maintenance grants are for communities with on-going urban and community forestry programs. Funds can be used for pruning, cabling, fertilizing, etc. Tree removal is not eligible. Mini-grants are seed money for communities and organizations for training, reference materials, single tree purchases and Arbor Day activities.